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**A THOUSAND INTERTWININGS: AN EXPLORATION OF EMBODIED ARTISTIC PROCESSES
MADE IN COLLABORATION WITH AN ESTUARINE LANDSCAPE AND ITS VIBRANT MATTER**

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A thesis submitted in partial fulfilment of the requirements of Bath Spa University for the
degree of Doctor of Philosophy

Bath School of Art, Film and Media, Bath Spa University

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**A thousand intertwinings: an exploration of embodied artistic processes made in
collaboration with an estuarine landscape and its vibrant matter.**

Lydia Halcrow

Abstract:

This doctoral research project is practice-based, artistic research. It proceeds through the development of a series of explorations of embodied, sensorial processes and emergent artworks made in collaboration with place, its materiality, entangled more-than-human¹ and non-human worlds through the often-overlooked stuff of the everyday; from the earth underfoot, to human debris in the form of abandoned structures, daily washed-up plastic and discarded metal detritus. These artworks are thought of as *matter maps* with the embodied making as experimental re-mapping activities. The project asks the question: *How can slow and collaborative artistic mapping processes generate careful records through touch and a close engagement with the vibrant matter of 'place'?*

The artistic work/processes as *matter maps*² are framed through contextual writing that aims not to replace the work with words, but to offer insights through the lens of Karen Barad's 'agential realism', exploring entangled intra-actions with matter (2007); Donna Haraway's diffractive exploration of matter as a mode of 'making kin' (2016); and Jane Bennett's 'vibrant matter' and 'thing-power' (2010). Contemporary writers including David Abram, Edward Casey, Gilles Deleuze, Tim Ingold, Brian Massumi, Maria Puig de la Bellacasa, Isabelle Stengers, and Rebecca Solnit will provide additional contextual insights in relation to care, embodiment, slow attunement, repetition, horizontal ontologies and the anarchic.

¹ A phrase attributed to David Abram in *The Spell of the Sensuous; Perception and Language in a More-Than-Human World* (1997), which refers to other living creatures that are not human. Donna Haraway takes this term and the non-human further to hold a more porous meaning that extends to all matter (2016). This research uses Abram's meaning of the term more-than-human and Barad's use of the term 'non-human' to mean 'matter' but recognises that this is not a hard definition. For example, soil may be non-human but is made up of more-than-human creatures and bacteria, so the definitions are complex and porous.

² This is the name I have given to the mapping approach and artwork, maps made about and with the materiality of the estuary, this is examined closely in Chapter Four.

Writers exploring contemporary artists working with place, materiality, trace and mapping are highlighted to attend to current trans-disciplinary discourse and artistic research within this field.

The project is the culmination of six years of frequent walks along the Taw Estuary in North Devon (UK), so this place in particular forms a case study. The emergent artworks are often fragile or in a state of flux, working with approaches to mapping human, non-human and more-than-human traces situated within a counter-cartographical framework (Stephanie Springgay and Sarah Truman, 2018). This approach aims to unsettle the embodied experience of walking in a place through the act of slowing down to form a close tuning into its matter, and to disrupt notions around what is mapped, how it is mapped, by whom and for what purpose. In this way the work and the contextual writing explores multiple strands that weave together and meander in forms that echo the experience of walking, the estuary itself and my childhood memories of this place. All are inextricably entangled with my experience of the Taw, the residue of the estuary on my walking body, and the trace of my body within the estuary.

Key words:

Practice-based artistic research, contemporary mark-making, creative ecologies, critical place inquiry, landscape research, creative geographies, haptic geographies, environmental humanities, more-than-representational theory, new materialism, walking methodologies, agential realism, diffraction methodologies, counter-cartographies, climate crisis³, the anarchive.

³ The thesis refers to 'climate crisis', 'global heating' and 'climate emergency' as opposed to 'climate change'. This is in response to Timothy Morton (2018) relating to the *Hyperobject* that aligns his thinking with that of many climate scientists in that climate change posits the possibility of change as moderate, positive or something we can adapt to. This word masks the unfolding daily reality of species extinction and rising sea levels and therefore the severity of the situation. I refer to this further in relation to the pivotal 2018 IPCC report within this writing.

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All images are courtesy of the artist unless stated in the caption directly beneath the image.

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In memory of Jean Crompton 23rd July 1917 – 8th February 2021.



Figure 1: Observation image: the larger of two abandoned ships along the banks of the Taw Estuary in North Devon, UK, 2019.

Foreword

My walks began in 2014 on Salisbury Plain at the start point for this PhD, with the research question: *how could I capture and convey a sense of place and its unique identity through contemporary painting and drawing?* By 2015, after time away from making/walking with the birth of my second daughter, the project saw a shift in place and approach to the Taw Estuary in North Devon for a period of six years. This was a place I knew well – my grandmother had spent much of her life living in a bungalow overlooking the Taw, and I had often stayed with her as a child and as an adult.

Through slow walks along the Taw, touching and working with the matter of the estuary – walks that were increasingly held in the shadow of my grandmother's failing memory – ways of working *with* the matter of the Taw emerged. (This notion of being *with* is explored

throughout this text). These were creative attunements that attended to the tiny differences held within the meeting points of matter and my sensing body. Gradually a revised research question formed, which recognised the limitations of a human-centred approach at the outset of the project that aimed to *capture and convey*. The revised question forms the main focus of the PhD and this written account, asking: *how can slow and collaborative artistic mapping processes generate careful records through touch and a close engagement with the vibrant matter of 'place'?*

Although the start of the project and the initial research question was framed around a grouping of artists explored in Chapter Two, as the project grew it became shaped *by the matter* of the Taw primarily, with the thinking of significant writers set out below as context. In this way, despite being artistic research, it was not shaped by a close exploration of a grouping of artists, and so this is not included within the writing. Instead the focus is on a close and sustained material exploration and the insights afforded through this approach. A later contextual framework emerged through researching in particular Barad's 'agential realism'⁴ (2007), Haraway's 'making kin'⁵ (2016) and Bennett's 'vibrant matter'⁶ (2010).

I want to acknowledge however, that there is a rich and varied field of artists around the world, working in a myriad of transdisciplinary approaches *with* place at the intersections of walking, matter, trace, mapping and environment. These diverse creative practices have been written about in detail by Donna Haraway, Mary Modeen and Iain Biggs, Jane Bennett, Edward Casey and Harriet Hawkins, amongst many others (including multiple artistic research collectives globally). I have not tried to replicate this writing within the text that follows, but to acknowledge that my own practice is situated within the context of other

⁴ Barad's agential realism 'does not limit its reassessment of the matter of bodies to the realm of the human (or the body's surface) or to the domain of the social. In fact, it calls for a critical examination of the practices by which the differential boundaries of the human and the nonhuman, and the social and the natural, are drawn, for these very practices are always already implicated in particular materializations.' (2007, p.210).

⁵ 'making kin' is for Haraway a mode of tuning into more-than-human and non-human worlds, and finding ways to live that are 'reciprocal' as a mode of 'staying with the trouble' of environmental degradation in the now and the future. Haraway refers to this degradation as the age of the 'chthulucene' in place of 'anthropocene' or 'capitalocene' (2016).

⁶ Bennett likens vibrant matter to; 'the lively powers of material formations, such as the way omega-3 fatty acids can alter human moods or the way our trash is not "away" in landfills but generating lively streams of chemicals and volatile winds of methane as we speak.' (2010, p. vii).

artists aiming to tune into the earthy and human/non-human matter of place. The writing instead aims to offer an authentic account of how and why the research emerged as it did, through a close attention to significant entangled encounters along the Taw and the knowledge that formed as a result.

*

Introduction:

‘It matters what matters we use to think other matters with; it matters what stories we tell to tell other stories with; it matters what knots knot knots, what thoughts think thoughts, what descriptions describe descriptions, what ties tie ties. It matters what stories make worlds, what worlds make stories.’ (Haraway, 2016, p.12)

I begin with Donna Haraway’s words to contextualise the writing that follows. Over the course of my PhD, it has been a quote that I have returned to again and again, and so I will refer to it throughout this text to echo Haraway’s own threading through of these words within and as a mode of *Staying with the Trouble – Making Kin in the Chthulucene* (2016). This approach has the intention of opening up a reciprocal conversation between different aspects of the artwork as research, the processes that formed the work and the key themes of the project relating to matter. I want to frame this PhD clearly from the start as being practice-based artistic research⁷, so that the contribution to new knowledge sits within the artwork and the artistic processes (which I will refer to within this text as ‘the work’ and/or

⁷ I have taken forward the definition of artistic research as a ‘creative systematic activity undertaken in order to increase the stock of knowledge, including knowledge about humanity, culture and society, and the use of this knowledge to devise new applications.’ (OECD Glossary of Statistical Terms, 2008). The role of not knowing within artistic research I position as a mode of creative inquiry: ‘Research, therefore, means the state of not knowing – or even better, not yet knowing along with a desire for knowledge (Rheinberger 1992, Dombois 2006).’ (Klein, 2017).

as ‘the research’), with this written component enabling a diffractive *reading through* different contextual thinking to offer insights into the work and how it emerged.

The writing that follows examines the journey this research took in relation to pivotal events / experiences and inputs. First, I want to make clear the role that this text plays within the research and the relationship of this writing to the work. This writing is written in the English language in the structure of a piece of academic writing within the framework of a Doctoral PhD. This may sound obvious, but as Haraway sets out, these structures exist, and they matter. How we think thoughts and describe descriptions matters (2016). Part of this research concerns the structures that we use to do this, to question underlying assumptions and to offer artistic processes as ways of thinking / being and mapping with(in) a place that attend to small and often overlooked differences.

By ‘place’⁸ I align this research with Doreen Massey’s understanding that ‘place’ is not static, but in constant flux, not singular but multiple, not simple to define but ambiguous, not boundaried, but porous (2005). As such the research takes an understanding of the emergent nature of ‘place’ to be formed through material entanglements⁹ constantly evolving or ‘worlding’ (Barad, 2007; Haraway, 2016; Ingold, 2010). These material entanglements hold forth a sense of ‘vibrancy’ or ‘vitalism’¹⁰ (Bennett, 2010), in that at the complex meeting points of matter, the resulting intra-actions hold an unpredictable but often enchanting quality to them, with a sense of power or agency that Bennett terms ‘thing-power’¹¹ (2010). These ‘things’ for Bennett can be the unlikely combination of a rat, a storm drain, some rubbish, or the surging electrical network of the US during a wide-scale power outage. This writing will examine the material meeting points along the Taw in all

⁸ Relating place inquiry to McKenzie and Tuck’s *Critical Place Inquiry* (2015), which explores place through the lens of critical geography, spatial theory, new materialist theory, and decolonizing theory. Through a range of methodologies, it examines place as an often overlooked line of inquiry. This builds upon Yi Fu Tuan’s (2001) examination of how humans build relationships with place as affected by a sense of time, with Massey (2005) arguing along with Malpas (2018) and Casey (2013) that places are not static or defined enclosed spaces but in a state of constant evolution with multiple relationships tangled together.

⁹ Barad positions entanglements as ‘the ontological inseparability of intra-acting agencies.’ (2017, P. G111).

¹⁰ Bennett positions a vital materialism as ‘a more radical displacement of the human subject than phenomenology has done, though Merleau-Ponty himself seemed to be moving in this direction in his unfinished *Visible and the Invisible*.’ (2010, p. 30).

¹¹ Bennett relates *thing-power* to a ‘childhood sense of the world as filled with all sorts of animate beings, some human, some not, some organic, some not.’ (2010, p. 20).

their vibrancy, and the unexpected thing-power that leaves traces and residues within the body of artwork.



Figure 2: Observation image: the smaller barge of the two abandoned ships along the Taw Estuary, UK, 2018.

The work has made visible material entanglements that were encountered along a series of walks within the Taw Estuary, so that my thinking/making has in Haraway's terms been *with* and *through* matter (2016). It is therefore important to make visible the structural assumptions that underpin this writing. By stating them I am trying to make them clear from the beginning, and to question the limitations written structures impose on how we share experiences, stories and an understanding of the world. In PhD terms, I question how (and why) we contribute to new knowledge and with whom we share it (and to what ends). These are questions that question knowledge that are very much central to new materialism¹² and an ecological epistemology (Isabelle Stengers, 2000). I apply Barad's thinking to the collaborative creation of knowledge (in non-human and more-than-human terms) within this research:

¹² For example, Diana Coole and Samantha Frost examine structural questions relating to knowledge in *New Materialisms; Ontology, Agency and Politics* (2010), through 'Introducing the New Materialisms', framing the essays that follow from diverse writers including Bennett (2010).

‘There is an important sense in which practices of knowing cannot fully be claimed as human practices, not simply because we use nonhuman elements in our practices but because knowing is a matter of part of the world making itself intelligible to another part. Practices of knowing and being are not isolable; they are mutually implicated. We don’t obtain knowledge by standing outside of the world; we know because we are of the world. We are a part of the world in its differential becoming.’ (Barad, 2007, p. 185).

Research as ‘personal’

This research developed through a growing understanding that the knowing situated within the work is made with ‘nonhuman elements’ in collaboration with my own personal and embodied experiences. The personal experiences of my walking body are very much situated as ‘a part of the world’ and not through an approach that positions the research / researcher in the third person as somehow ‘standing outside of the world’ (Ibid). The personal needs to recognise my body as white, currently able-bodied¹³, European and female, to make clear the legacy of structures and histories of gender and colonialism within which I walk and make.¹⁴ The personal and the non-human elements do not mean the knowledge generated has no relevance to others. It just places all of the aspects that went into the making as an integral part of the ‘practices of knowing’ (ibid). As Barad states, what we know, and how we know it, is of vital importance. Humans are not distant observers to knowledge creation, but entangled actors within it, forever changing the way knowledge is generated, recorded and disseminated (2007). We can only know the world through being

¹³ Phil Smith located the dominant walking narratives as an able-bodied narrative that he disrupts by extending walking to any human body navigating a place on crutches, mobility scooter, wheelchair etc. (2020). I extend this expanded understanding of ‘walking’ to this research.

¹⁴ I position this in relation to dominant narratives of place seen through the lens of the white, ‘western’, male, walking body held within much written and academic knowledge of how ‘place’ has been examined (Massey, 2005, Springgay and Truman, 2018, 2019). Disrupting this, Springgay and Truman state that ‘More-than-human walking methodologies must take account of the ways that place-based research is entrenched in ongoing settler colonization. As such, place in walking research needs to attend to Indigenous theories that centre land, and posthuman understandings of the geologic that insist on a different ethical relationship to geology, where human and nonhuman are imbricated and entwined.’ (2018, p.5).

within it. To this end Barad claims *all* research is formed through personal experiences (2007).

Artistic Research as a personal inquiry

In contextualising this artistic research, Robin Nelson's words resonate when he says, 'I am by no means opposed to words but having recognized their slipperiness, we should give up the pretence that they are transparent and convey knowledge immediately.' (2013, p22). The artwork does not aim to 'convey knowledge immediately' (ibid), instead it aims to hold a complex record of the entangled material meeting points with the Taw, in a form that is non-linear, rhizomatic¹⁵, developed over many series to hold a direct relationship with the estuary's matter and attend to tiny differences. My position is that artistic research has a different capacity to generate and convey knowledge that moves beyond the written word. As Sally Atkins says in relation to Art as Research:

'To the Gods and Goddesses of Research
To challenge the privileged paradigm
To break the illusion of objectivity
To carry lightly the loud weight of words
For we are longing for poetry
Woven through with dance
And drama performed with music
Let us look with both eyes open
At our unexamined subjectivities
Let us crack the categories of our thinking
And find epistemology of the senses
Where wonder and passion interplay with reason.' (2012, p.59/60¹⁶).

¹⁵ Rhizomatic relates to Deleuze and Guattari's writing in *A Thousand Plateaus* (2004), which explores a way of thinking as sending out multiple shoots in different directions that relate in complex and non-linear ways. This is in contrast to the shape of writing which typically has a start, middle and end and takes a linear form (Ingold, 2020).

¹⁶ http://expressivearts.egs.edu/fileadmin/Resources/Public/Downloads/Where_are_the_five_chapters.pdf, accessed February 2020.

Recognising the slippery nature of words, or in Barad's terms (relating to Bohr's writing) the lack of transparency in words, is important in how the text that follows is read (2007). Placing the research and knowledge within the artwork, with this writing as a secondary contextual component, aims to 'carry lightly the loud weight of words' (Atkins, 2012, p.60). The way of knowing is generated through a sensorial approach, it is knowingly personal and questions assumptions of objectivity through the making and within the contextual framework of this writing.

I position the personal not in Atkins' terms as a 'subjective approach' (2012), but I align it with Barad's agential realism that recognises at each turn the implication of the individual human body as being situated *within* the entangled intra-action with matter in the formation of research / knowledge, rather than somehow *outside* of the very things being explored. Barad highlights that every research project, every experiment, is rooted in the personal, in so far as the person doing the research has a direct relationship with how the research is measured, the apparatus used, and the outcomes recorded (2007). As Barad states repeatedly, humans are not outside observers to the world, this is a false sense of 'objectivity'. Humans are centred within the world and within any research experiments undertaken. To recognise the entangled nature of the human within the research is according to Barad, building on Haraway's thinking, a more objective approach because it takes into account and makes visible *all of the aspects* in the mix of the research, including the researcher: '...objectivity in an agential realist sense requires an accounting of the larger material arrangement (i.e., the full set of practices) that is a part of the phenomenon investigated or produced' (Barad, 2007, p.390). Including the (human) researcher to foster a more objective approach is not an anthropocentric approach or highly personal. Rather it acknowledges that as humans we can only experience the world through our personal experiences, that even the most 'objective' research sits upon the foundations of multiple human decisions entwined with other matter present. Acknowledging the 'larger material arrangement' that makes the research is important (ibid). This artistic research is developed on the foundation of this understanding.

How these 'practices of knowing' (Barad, 2007, p.185) are shared is another structural issue of relevance in relation to this research given that I position the knowledge as generated through artistic research. As Foucault (1992), Barad (2010), Haraway (2016) and Abram (1997) amongst others explore, in western cultures there is a reliance on knowledge written in (often the English) language which holds many limitations in terms of how knowledge and thinking is generated, shared, furthered and how assumptions are laid bare and questioned, by and for whom.

The language of the research matters, the language of knowledge matters. How knowledge is developed and shared matters. The research holds a record of six years of making with(in) the Taw Estuary - the place and time matters. A different place at a different time, or the same place at a different time, or the same place at the same time with a different artist-researcher would have led to a different language emerging through a different series of (artistic) records.

A non-anthropocentric approach

The research holds as central a non-anthropocentric, collaborative approach to making, that I align to a flat ontology¹⁷ (Harman, 2018; Morton, 2013), which positions my body and personal experiences as equal to other matter (encountered along the Taw) that formed the work. The work is therefore made in collaboration with the estuary and its materiality. However, the nature of writing and the fact that 'I' am writing it, immediately places 'me', 'my' body and 'my' experience as having a louder voice within the project. This is again a limitation of the structure of writing. In the artwork, the 'I' is absent, the record of the entangled encounters of matter is evident in a different form. In the English language, the possessive pronoun of 'my' walking feet, 'my' feeling hands holds the possibility of undermining what is positioned as entangled and collaborative ways of working with the matter of the Taw, thus making this a more anthropocentric and possessive / individualistic piece of writing in tone. If this were written in French (for example) my hands and feet

¹⁷ This holds a close relationship with Latour's Horizontal Ontology for humans and non-humans (2020).

would become 'les mains, les pieds' (the hands, the feet) because of how body parts are expressed. This would shift the emphasis away from the possessive, the individual, towards the third person - altering the meaning of the written text. These are linguistic limitations that I want to make clear from the outset, so that despite this personal written account, the project aims to be non-anthropocentric and the personal aims to hold application to other humans through the questions and knowledge formed collaboratively with other matter (human/non-human and more-than-human) within the work.

Respons-ability and knowledge

Acting responsibly and ethically within the creation of knowledge is something Barad places as central in relation to quantum physics and technological pursuits; 'learning how to intra-act responsibly as part of the world means understanding that "we" are not the only active beings – though this is never justification for deflecting our responsibility onto others.' (Barad, 2007, p. 391). For Haraway there is a 'respons-ability'¹⁸ integral to 'staying with the trouble' of the unfolding climate crisis (2016). The project has fostered a growing awareness of what it is to act with 'respons-ability' and this understanding has shaped its development. That is not to say that I have always succeeded, but I have questioned my own actions, use of materials, ways of working and thinking throughout, modifying my actions and processes as a result. Again, the writing will examine these aspects of the research (in Chapters One, Two and Four specifically).

The knowledge generated through the work that developed between my human body and the non-human matter along the Taw is not intended to be exhaustive, but always partial and ongoing. It can be applied by others in terms of an approach that is grounded in artistic methods and an embodied methodology to investigate other places. Future investigations would apply the knowledge generated through this research as a point of departure with which to further develop new processes in collaboration with other places and other human

¹⁸ This is for Haraway the human possibility of responding to the more-than-human and non-human, a mode of close engagement with the 'other'.

bodies and non-human / more-than-human matter in other time frames. This would generate more records of places (as yet undefined) that would be artistic records, that in the context of this project I position as *matter maps* – maps made about and with the materiality of the estuary, (this is examined closely in Chapter Four).

This research is therefore place-bound, time-bound and bodily-bound with an understanding that these ‘boundaries’ are in fact porous, as well as bound to the phenomena doing the measuring (Barad, 2007). These themes will be expanded upon in more depth through this writing. I position the artwork as a different way to tell Haraway’s ‘stories’ about the place of the Taw, stories told through different registers, enabling different ‘practices of knowing’ (Barad, 2007, p.185), stories that are knotted through entangled intra-actions with the matter of the estuary. Entanglement, intra-actions, boundaries and measurements are terms relating to Barad’s ‘agential realism’ (2007), that combined with Haraway’s ‘making kin’ and ‘staying with the trouble’ (2016) and Bennett’s ‘vibrant matter’ (2010), will form a framework through which to examine the project. This will again be explored in more detail within this writing and set out as a methodology in the Chapter One. Exploring small and evolving differences within the vibrant matter of the estuary through repetitive embodied processes will be explored through Gilles Deleuze’s *Difference and Repetition* (1994). The writing also explores the relevance of thinking relating to embodied/sensorial and counter-cartographical approaches to explore a place and its matter, (particularly through Springgay and Truman’s *Walking Methodologies in a more-than-human world*, 2018). These frameworks open out a contextual understanding of the research formed between my walking body and the matter of the Taw, mapping these entangled encounters.

These contextual frameworks were not set out at the start of the project – and the project did not develop primarily through them, but through encounters with the estuary’s matter. Instead these frameworks I found particularly helpful towards the later stages of the project to offer different lenses through which to examine the research and how it has emerged, and to open out the questions posed through the artistic research.



Figure 3: Observation image: looking back across the Taw towards my Grandmother's bungalow on the other side of the estuary from the start point of the many walks, a shingle rock formation, called *The Black Ground*, 2017.

My aim is that through the case study of the Taw there are wider questions that hold relevance to investigating place in general:

- How can slow and collaborative artistic mapping processes generate careful records through touch and a close engagement with the vibrant matter of 'place'? This is the central over-arching question.
- What it is to be human exploring a place as a part of nature?
- How can artistic processes that are slow, sensorial and embodied, developed *with a place*, forge a way of tuning into the complex intertwined relationships of humans, more-than-humans and non-human things?
- How can artistic practices explore the entangled nature of the earth, sea, silt, air and the human body / traces of human existence?
- How does the measurement / observation of the matter in a place change what is observed and what traces remain?
- How can the emergent artworks offer maps to attend to the different material / textural records of this coastal place under threat of sea level rises, erosion and development?

Structure of the writing

The writing takes the form of this introduction, five chapters and a conclusion, offering a theoretical 'reading through' of the work in relation to place inquiry. Each chapter begins with a short extract from my field notes that were either written or audio recorded during or immediately after a walk along the Taw. These field notes are autobiographical thoughts triggered by and through the walks along the Taw. This approach holds links to an autoethnographic method to place inquiry (Pink, 2015, p. 125). The aim of this approach is to make visible my thought processes within the estuary as the artwork makes visible the traces of my sensing body intra-acting with the Taw (the processes hold links also in ethnographical terms to Pink's 'sensory ethnography' (2015) as a mode of practice based research). Some chapters include a significant quotation to frame the chapter. Key questions explored within each chapter are set out below, and these are returned to in the conclusion of each chapter in relation to specific themes. The themes will be explored in the chapter with reference to texts that enabled a depth of thinking and a shift in approach, alongside a close exploration of one or two processes that were developed with the Taw to understand how the themes and context relate to the knowledge contained within them.

With the limitations of the written language in mind, this writing will use phrases and terms that resonate with walking and will loop back to themes and ideas to echo the sensation of repeated circular walks in a place over time. The aim with this form is to echo elements of how the project progressed through repetitive processes formed through repeated circular walks along the Taw and the nature of the watery place of the estuary and its constant flow. The writing also takes as an inspiration point my many readings of W. G. Sebald's *The Rings of Saturn* (1995) that charts the interwoven and ambiguous nature of memory and place through his walks along the East Anglian coastline.



Figure 4: Image of work in progress: making ground rubbings on the underside of canvas in the early stages of the project, 2014.

The chapters will cover the following themes in relation to the body of work that has emerged:

Ch. 1: Walking, slowing, disrupting, sensing; methodologies to tune into place; diffractive methodologies as a mode of contextualisation

Questions explored during this chapter include:

- How was walking as a methodology adopted at the start of the project?
- How and why did this evolve?
- What contextual research supported this methodology?
- What other methodologies became relevant, why and how?

Ch. 2: Entangled encounters with vibrant matter along the Taw (making *with* place)

Questions explored during this chapter include:

- What significant events marked the shift between the initial research question aiming to 'capture' a place towards 'collaborating' with it?

- What relationship does this research have with the work of other artists and how did this evolve?
- What does it mean to be entangled with matter and how does this relate to an artistic approach to place inquiry?
- How did the processes enable a record of the entangled intra-actions with matter from the Taw?

Ch. 3: Memory, repetition, difference, control and trace

Questions explored during this chapter include:

- What was the role of repetition in relation to both walking as a methodology and the processes developed?
- How can repetition as an approach enable the small shifts in matter to be evident as a trace within the work?
- Where does memory inform the research and how?
- How can repetition act as a witness to the differences within human and non-human intra-actions?
- How is time / scale and trace explored in the research in relation to the human and non-human?

Ch. 4: Collaborative re-mapping through care, reciprocity and touch; a counter cartographical approach

Questions explored during this chapter include:

- How does the work relate to mapping?
- How does mapping relate to measurement (of place)?
- What is the relationship of the work to 'counter cartographies' (Springgay and Truman, 2018) and other contextual frameworks?
- What is the relationship to the senses – and a sensorial mapping? (touch in particular)
- How can mapping methods work collaboratively with a place?

- How can the artworks as *matter maps* offer different records to foster care / responsibility towards a place *through* the approach to making?

Ch. 5: Pulling strands together, from the grid to the ‘anarchive’ – exploring ways to share the work

Questions explored during this chapter include:

- How to bring the work together without an over-reliance on the grid?
- How to place the unfixed and shifting nature of the work as a central consideration in terms of how it is shown?
- How to form an approach that holds the senses (and not just sight) as part of how the work is experienced?
- How to foster a connection between the work as a trace of the entangled matter of the Taw, the processes of the making and the Taw itself?
- How were these approaches contextualised?

Ch 6: Conclusion and new knowledge

Questions explored during this chapter include:

- How did this research develop – what were the pivotal encounters and contextual points?
- What is the new knowledge generated through the project?
- Where is this new knowledge found?
- How was this new knowledge arrived at?
- Who is it applicable to?
- What is the distinction between how knowledge was generated and what emerged and the key contextual points?

Chapter One:

Walking, slowing, sensing, diffracting; methodologies to tune into place; diffractive methodologies as a mode of contextualisation

Chapter summary:

This chapter investigates walking as an embodied and sensorial methodology through which to investigate the Taw and form a series of artistic processes. It opens out ways of encouraging a gradual attunement into the estuary through the repetitive nature of walking, slowing down and making my body strange. Rebecca Solnit's writing about slowing and walking as a mode of resistance and as a type of rhythmic thinking (2007) is examined along with Springgay and Truman's 'walking methodologies' (2018), to contextualise the role of walking as a methodology within the research and exploration of the Taw. The importance of the bilateral nature of my walking body in shaping the form of the work is highlighted (Casey, 2005; Christopher Tilley, 2004), as is walking as a playful, embodied approach and a mode of engaging with the vibrancy of matter (Bennett, 2001, 2010).

A secondary methodology is examined that has formed a framework through which to bring the research together in relation to a range of theorists. This is grounded in a diffractive methodology as developed by Haraway (1997) and expanded through Barad's agential realist framework (2007). This has placed 'reading through' (Barad, 2007) a range of theorists across disciplines as a way to further contextualise the research, to offer insights and tune into the small differences that have emerged through the work. The chapter will explore how the 'reading through' of a diffractive methodology moves away from reflective ideas of research as a mirror to the world, and instead towards gaining multiple entangled understandings through a trans-disciplinary approach (of which the outcome is artistic research).



Figure 5: Image of work in progress: painting onto paper the clay found in rockpools at low tide along a shingle rock formation called *The Black Ground* (OS Grid Ref: SS 475 313). This way of working became a form of fieldwork throughout the research as a way to tune into the materiality within the Taw, its vibrancy and textures.

Extract from field notes, August 14th 2018:

Most often the tide is out – the sea a distant idea blending into Hartland and Lundy, sometimes there, sometimes in cloud or tracking the incoming storm. I step onto the rock formation; clay sits in damp salty pools. I bend down and push my fingers deep into the sticky mud and make a mark onto the closest rock. I was here.

Today there are people at the low tide line where the sea meets the sand. It's sinking sand there so I wonder how they stand. They are looking for something. Cockles? Spades in hand and bags on arm. The sunshine frames their distant figures, the wind blows salty strands of hair into my face. It's become like an old friend this ship. We sit in companionable silence. I remember a conversation a few days back with my eldest daughter, it went something like this; What are the ice caps Mummy? And why are they melting? What happens when they melt? Can't they just make more? No, I say. She thinks a while then: So the very last ice cap will be like a teeny ice cube just melting away and then they'll be gone. Me: yes, maybe so. Then they'll be gone.

‘Everything leaves a shadow-trace of some sort. But the body of the thing can no more be detached from its shadow than it can be removed from the world in which it exists. We know that a person has been by their footprints in the soil.

Anatomically, perhaps, as a structure of flesh and bone, the foot is part of the body, but in our experience of walking, it is only a foot in its contact with the earth; and the earth we walk exists for us only because of the way we feel it with our feet. Thus we cannot say that the foot belongs to the human and the print to the earth. Rather both foot and print are complementary aspects of the one earth-human.’
(Ingold, 2020, p. 37).

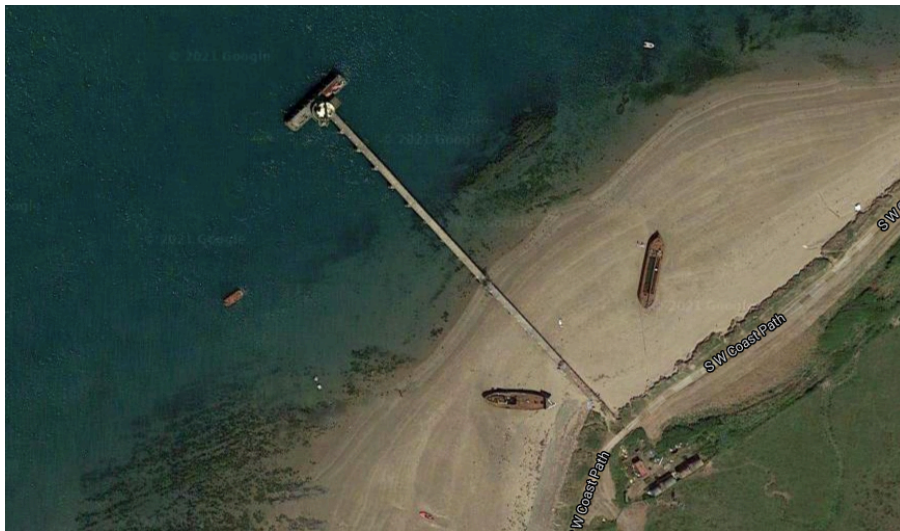


Figure 6: Satellite image of the two larger abandoned ships and disused jetty. The Taw Estuary has one of the largest tidal variations in the world from low to high tide, which completely alters the landscape daily and throughout the year (the Severn Estuary further along the coast has the second largest tidal variation globally). Peak tides usually fall in spring. Image credit: Google Earth, imagery © 2022 CNES / Airbus, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data © 2022.

A background to a personal relationship with walking

As a child, walking was a part of every-day life and the stuff of family stories. Maps were unfolded on kitchen tables with walks retraced by finger tips, holes and tears emerging over time in the paper at the folds, favourite places gradually erased through tender touch. Stories of mists descending, stories of blisters the size of golf balls, stories of getting lost in foreign lands. My grandmother once walked the width of the British Isles, and over successive summers, across Europe with four small children in tow. And yet there was also

another side to walking, the sense that it was enforced, controlled, the pace always a little too fast, the distance always a little too far – a restless parent walking away from their own unhappy childhood memories. As a child whose walk was I on? Who was I walking for? What was this troubled energy that needed quelling each and every day?

Walking as a research methodology to investigate place

As an adult when the freedom and the choice was mine, I started again to walk, not just to get from place A to place B, but as a way to tune into places, to attend to the details.

Discovering new cities on foot, finding comfort in the familiar rhythms of legs and arms swinging, feet striking the ground, the body's forward motion. Walking became a part of my creative practice – a way to examine the relationship between my body and a place, to make marks and collect marks left behind by my and other walking bodies. Walking with(in) the Taw, the focus of the research was not to document the walks, nor to place walking *as* the artwork aligned to walking artists. It was instead to understand walking as a mode of slow and close tuning into the materiality along the estuary, as an approach to form an understanding of the fluxing entangled meeting points between my walking body and the matter of the estuary. These meeting points were recorded through the processes, themselves in a state of flux, that held traces of the entangled intra-actions as a record within the *matter maps*¹⁹ that emerged.

At the time of starting this doctoral research in 2014, I had a small child and was soon expecting my second, so that after the first year of the project I spent the next year trying to walk at various stages of pregnancy and then carrying a small baby. The nine months of pregnancy had the effect of making my own body strange and unfamiliar to me. My relationship with my own walking body was changed through the experience of pregnancy. My walking gait gradually shortened – not quite to a pregnancy waddle but close. My footing and balance became less sure, my centre of gravity pitched forward with the weight of the load I was carrying, my back ached, the pace of my walks slowed, the length of them

¹⁹ The *matter maps* will be examined in detail in Chapter Four.

reduced. My walking body gradually lost the ability to spontaneously bend down and pick something up or make a rubbing of the ground.

The physical changes that framed the early walks of the research had the effect of making strange not only my own body but also how my body entangled with other matter along the walks. This mattered because it had the unexpected effect of making me much more aware of how I interacted with my surroundings, how I moved within a place, how my feet touched the ground, the sounds and the pressure, the volume of space my body inhabited. This effect came about because my body changed, it grew to grow a new life and then shrank back. In this way a research methodology formed that was embodied, it was sensorial and it placed not just walking, but the deliberately disrupted rhythm of slow walking as the central methodology that led to the development of a range of processes made with the Taw to explore the matter of the Taw.

The making strange holds an unexpected connection to Jane Bennett's approach to an exploration of vibrant matter. She says, 'I will turn the figures of "life" and "matter" around and around, worrying them until they start to seem strange, in something like the way a common word when repeated can become a foreign, nonsense sound.' (2010, p. vii) This weaves a thread to later writing within this text about the relevance of repetition as a mode of walking/working and being within the Taw, that holds another connection to disrupting the senses and an embodied sense of a familiar place (see Chapter Three).



Figure 7: Observation image: view towards Crowe Point along the Taw, 2016, the tide having just gone out, leaving rock pools behind. I often collected the estuary clay in these rock pools, as the outgoing tide took the sand and silt with it. The retreating tide leaves behind exposed areas of soft grey and brown clay, and sometimes pockets of the local earth, Bideford Black.

Walking methodologies through a non-anthropocentric lens

At the start of the project I thought of my walking body in phenomenological terms as part of the world and as a whole sensing body (with no separation of body and mind) so that [my] 'body is in the world as the heart is in the organism.' (Merleau-Ponty, 1978, p. 203). This phenomenological approach shifted towards the later stages of the project, that as set out in the introduction, moved to a closer alignment to a less anthropocentric approach favoured by Barad (2007), Bennett (2010) and Haraway (2016). This shift emerged through a direct material engagement with the matter of the Taw within the processes, that allowed me to understand how entangled my own walking body was within this (and other) places.

Through this shift I began to understand my body not just as ‘being-in the world’ (Merleau-Ponty, 1978), but as a part of the world and a part of nature that I sought to understand (Barad, 2007). In this way there was no separation between my walking body and the matter of the Taw, but a growing awareness of an entangled relationship, that will be examined further in this writing. This approach holds a closer alignment to eco-phenomenology and feminist-phenomenology, new materialism and to Bennett’s vital materialism (2010). This awareness came about through walking as a methodology, and specifically was forged gradually over the course of many repeated circular walks along the Taw estuary over the course of six years. The repetition of the slow walks became a way of thinking/making through the senses, that afforded a mode of close tuning into the materiality of the estuary and its unexpected meeting points, ‘in a world of distributed agency’ (Bennett, 2010 p. 38). The role of repetition in shaping the research is also explored in relation to Deleuze’s thinking later in the text.

Contextualising walking methodologies

There is a long-established heritage of walking and creativity, walking as an enabler, opening up thoughts and unearthing histories personal, underfoot and relating to investigating place; from Henry David Thoreau to W.G. Sebald, from walking as pilgrimage to protest. From walking artists and artists who walk; Richard Long’s exploration of materiality and physicality through walking; Francis Alÿs’ 1997 durational walks pushing a melting block of ice to make visible the trace of the paths taken, and Helen Billingham’s *Crossing England project* (2016)²⁰ as a way to tune into the undercurrents of the pre and post Brexit landscape. Contemporary artists walk alone and with others as a way to open out the body to their surroundings, to other humans, more-than-humans and to non-humans. Walking in these practices is a way to notice. Karen O’Rourke highlights the relationships between walking and mapping within arts practice (2013) that Mary Modeen and Iain Biggs examine through ‘creative ecologies of place’ in relation to ‘deep mapping’

²⁰ Explored amidst other artist-provocations in *Walking bodies, papers, provocations, actions*, (2020), Co-edited with Claire Hind and Phil Smith.

approaches, (2020). As Springgay and Truman examine through *WalkingLab*²¹ and in *Walking Methodologies in a More-than-human World* (2018), walking as contemporary practice forms a bodily method of research creation through the senses, through rhythm, embodiment and forging a connection to place and its matter. Walking, particularly slow walking as a methodology holds ‘a critical mode of walking-with that engenders solidarity, accountability, and respons-ability ‘in the presence of others.’ Through Isabelle Stengers ‘politics of slowness’ (2005), they go on to say that ‘...slow is not necessarily about variations in speed (although it can be), rather it is intended to ask critical questions, and to create openings where different kinds of awareness and practices can unfold. Slowness is a process of unlearning and unsettling what has come before.’ (2018, p.15).

Slow walking as a methodology

I placed the idea of slow walking as a strategy for unsettling both my relationship with the familiar place of the Taw, and my relationship with my familiar walking body. This slow approach to investigating place holds a close connection to Modeen and Biggs’ ‘slow residencies’²² and their writing exploring contemporary artists working with slow as a methodology to examine place. By slowing down, I was moving in a way that was unfamiliar to me, I was deliberately breaking my own instinctive rhythm and pace of walking. It felt strange in the way that, as a right-handed person, trying to write using my left hand would. It led to me experiencing the Taw and my body walking within it through new sensations, leading to a heightened awareness. The early walks along the Taw in 2015 were a return to a childhood place that I have visited frequently as an adult, but hadn’t walked again in the intervening years. So that there was also the unsettling / strange sensation of revisiting a place as an adult once familiar to a child’s eyes and the scale of a child’s body. This sense of a return that can so often lead to the uncanny sensation of a place being simultaneously familiar and yet unsettlingly just not quite the same (Trigg, 2013).

²¹ <https://walkinglab.org/>

²² As an approach the slow residency ‘signals a conscious engagement with time and the temporal in our lives’, they go on to ‘highlight a quality of attention that requires working at the speed that allows us to attend as well and as appropriately as we can to the world.’ (Modeen and Biggs, 2020, p.56).

Slow walking to (re)connect to place

(Slow) walking as a methodology in an increasingly digital world, was also a strategy for disconnecting from the virtual realm of the digital screen, aiming instead to (re)connect with the natural world, the textures, the sounds, the surfaces, the very earth underfoot (Solnit 2006). Whilst David Abram doesn't specify walking or indeed the speed of walking, he writes compellingly of what it is to really inhabit our bodies with awareness of where our bodies and the world combine:

‘As we reacquaint ourselves with our breathing bodies, then the perceived world itself begins to shift and transform. When we begin to consciously frequent the wordless dimension of our sensory participations, certain phenomena that have habitually commanded our focus begin to lose their distinctive fascination and to slip toward the background, while hitherto unnoticed or overlooked presences begin to stand forth from the periphery and to engage our awareness.’ (1997, p.63).

From the beginning, the intention was to form a close connection with a place through walking, to notice the ‘hitherto unnoticed or overlooked.’ (ibid). Walking as a methodology became a way to ‘think other matters with’, a way to ‘make worlds’ (Haraway, 2016, p.12). These worlds were predominantly non-digital, forged through a close sensorial attunement to the matter of the Taw. As Bennett says ‘The ethical task at hand here is to cultivate the ability to discern nonhuman vitality, to become perceptually open to it.’ (2010, p. 14). Walking acted as an enabler to this intention, an artistic mode that in ethnographical terms is ‘a form of engagement integral to our perception of an environment. We cannot but learn and come to know in new ways as we walk.’ (Pink, 2010, p.3). Slow walking as a methodology became a way of thinking, making, tuning in and caring – through an opening of out of perception.

Slow walking as a counter-cultural methodology and walking as a mode of thinking

The 'slow' of slow walking also holds a counter-cultural, counter-capitalist methodology '...slowness is an act of resistance, not because slowness is good in itself but because of all that it makes room for, the things that don't get measured and can't be bought' (Solnit, 2007). In an age of speed, slowing down can be a deliberate act against the status quo, a small disruption to the pace and rhythm of daily life. The role of rhythm in relation to walking as a methodology is explored further by Springgay and Truman through the identification of four major themes in walking research: 'place, sensory inquiry, embodiment and rhythm.' (2018, p.4). The development of the artistic processes emergent through this research are a close exploration of place *through* an embodied²³ and sensory inquiry. I have aimed to experience the familiar place of the Taw anew and to open up different ways of being and knowing with(in) it, through strategies that have unsettled and disrupted the rhythm of my sensing body. Walking as a methodology has also enabled a gradual forming, sifting and reforming of a series of research questions and possible approaches, a sense of what I have come to think of as *walking as thinking and walking as making*.

The walks were often staged through a fog of not knowing why I was doing them, and what I might be exploring through them. They were framed too within the increasingly confused stories about the Taw that marked the onset of my grandmother's dementia, the rhythm of her thoughts frequently disrupted, questions posed on repeat. Solnit highlights the role of rhythm in releasing and invigorating a thought process: 'The rhythm of walking generates a kind of rhythm of thinking, and the passage through a landscape echoes or stimulates the passage through a series of thoughts.' (2002, p.6). Walking as a methodology has not only been an approach to develop the research, but it has also been an approach in forming the research questions themselves, and the methods through which to explore these questions through the rhythmic nature of placing one foot in front of another. Ingold aligns knowledge

²³ With 'embodied' understood to extend beyond 'an individual and sensuous account of the body in space towards a different ethico-political engagement.' Alaimo (2010: 17); cited in Springgay and Truman. (2017, p.4).

with walking as: ‘an improvisatory movement – of ‘going along’ or wayfaring – that is open-ended and knows no final destination.’ (2010, p. S122).



Figure 8: Image of work in progress: metal plates attached to the sole of each walking shoe to ‘measure’ the meeting points between my feet/body and the estuary/earth/textures through gravity and motion (2019). These photographed plates make *Ground Texture Recordings*. They often hold patterns that echo the patterns on the sand at low tide after the waves have imprinted onto them. In this way, different marks formed through the processes held conversations with marks made by other matter within the Taw across different scales. This outcome was unexpected and could not have been predicted.

One of the first processes developed with the Taw, was a way to record the textures of the earth underfoot through the weight of each footstep on a walk (see Figure 8 above). This is examined in more detail within the section below ‘The role of *Ground Texture Recordings* within a walking methodology’. I would argue that the metal plates attached to my walking feet, acting as a register of the walks through *Ground Texture Recordings*²⁴, have been a mode of thinking through textural sensations, and thinking through walking. In relation to Springgay and Truman’s exploration of walking research, they have enabled a textural recording of the ‘place’ of the Taw estuary, to form a record of a ‘sensory inquiry’

²⁴ See Appendix One for detail about each artistic process.

undertaken through my walking body. *Ground Texture Recordings* acted as an extension to the 'embodiment' of my experience of walking along the Taw as a method to disrupt my walking 'rhythm', forcing my body to slow down as a result of the metal attachments, to enable me to experience this place and the intuitive action of walking anew (2018, p.4). The rhythm of walking in the Taw is entangled within the rhythm of the tides, seasons and processes of decay along the estuary. Walking with plates attached to my feet through the process of *Ground Texture Recordings* brought an awareness to where my human body mingled and blurred with other human bodies, more-than-human beings and non-human matter, how the intra-action between these elements is fluid and never resolved, in a state of always becoming (Abram, 1996; Barad, 2007; Bennett, 2010; Ingold, 2010). They formed an assemblage in Bennett's terms (2010), that led to unpredictable mark-making and textural outcomes, recording matter's vibrancy in contact with the gravitational pull weighing my walking body down into the estuary's silt and rocks. Walking *slowly* with the plates marking out each step, each relationship between the body and the textural earth below offered a way to (re)connect with the Taw, to become immersed within it at a point in time of mass reliance on virtual forms of technology. As Abram says:

'We need to know the textures, the rhythms and tastes of the bodily world, and to distinguish readily between such tastes and those of our own invention. Direct sensuous reality, in all its more-than-human mystery, remains the sole solid touchstone for an experiential world now inundated with electronically-generated vistas and engineered pleasures; only in regular contact with the tangible ground and sky can we learn how to orient and to navigate in the multiple dimensions that now claim us.' (1996, p.X).

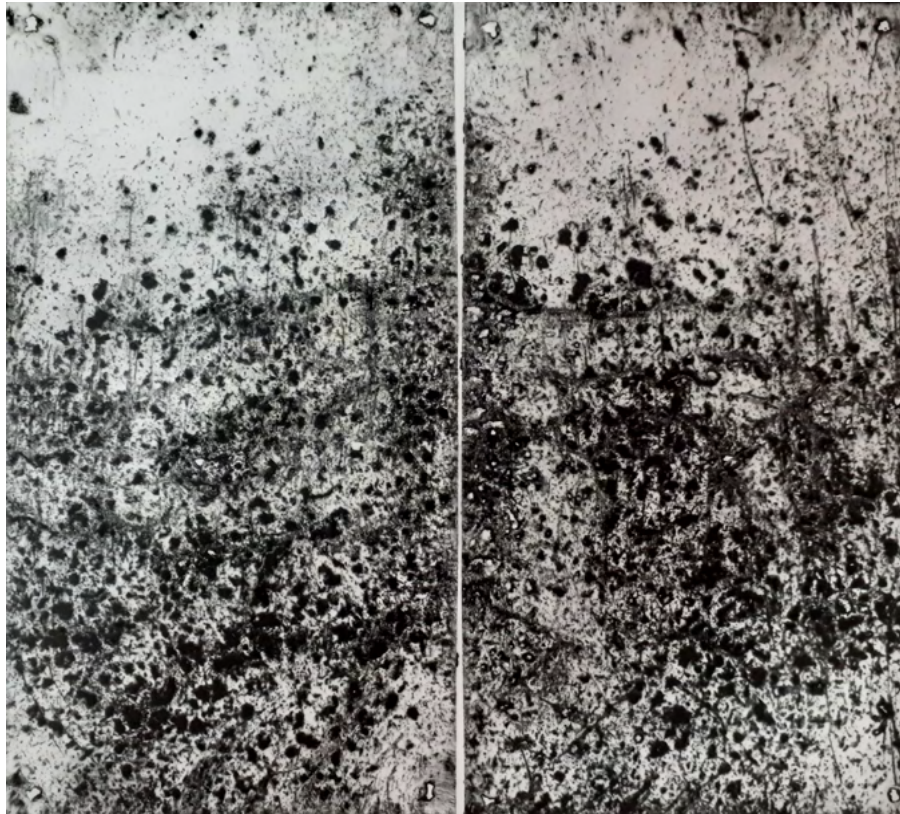


Figure 9: Image of work included in the PhD exhibition: *Ground Texture Recordings* (June 2020). Left foot and right foot etched recording on Somerset Satin with handmade ink from collected estuary earth, Bideford Black, each 12 x 9cm.

The bilateral nature of walking

The textures of the world were explored through the senses and in particular through touch. I began to collect eroded earth from the estuary banks to grind into pigment and mix with printing oil in order to make visible the traces of marks made through *Ground Texture Recordings*²⁵. Through this action, it became apparent that the left foot and right foot held very closely related, but at the same time, unique records of marks scratched and indented into the left and right aluminium plates attached to each boot (see Figure 9). No two plates made with left and right feet were the same, but the pairs were in close conversation with each other. I began to investigate what the mark-making on the plates was telling me

²⁵ See Appendix One for full details of this and each artistic process.

through the bilateral nature of our walking bodies through Edward Casey's writing (2005).²⁶ Casey examines the role of the moving body in experiencing place, and the importance of the bifurcation of the body in how we relate to a place (2013). The dual aspects of left, right feet and hands through the bifurcated body interweave and interrelate. There is a reciprocity in action, the trace of which is forged into the left and right metal plates. Each plate holds an echo of related marks made that holds interrelated scratches, that on closer inspection are different (see Figure 10). The archaeologist Christopher Tilley highlights that our feet 'cannot occupy the same place. A right shoe will not fit a left foot.' He goes on to state that 'the experience of places is thus in part grounded in human bilaterality.' (2004 p.8-9). This sense of human bilaterality is one of the embodied ways in which I experienced the Taw through walking as a methodology and is evident in the work. Many of the artworks have formed to hold a sense of a left and right side, or a front and back register, some holding a small gap between each 'side' to hint at other possibilities and unknowns falling between the left and right or front and back records. Just as with our walking bodies, in the work, the symmetry resulting through bilaterality is always slightly disrupted, (slowly) tuning in allows the small differences of marks made in and on the surface to emerge.

²⁶ Casey expands here upon Immanuel Kant's early phenomenological writing, which was further developed by Edmund Husserl (2005).



Figure 10: Image of work included in the PhD exhibition: *Ground Texture Recordings (June 2020)*. The marks held on the left foot plate hold a similarity to the marks held on the right foot plate, both made through the same walk across the same surfaces, but both forming unique marks held within the surface due to the bilateral nature of walking.

Walking as measurement

Not only is walking ‘how the body measures itself against the earth’ (Solnit, 2001, p.28), but I extend this idea through Haraway’s thinking about reciprocity (2016) and Barad’s entangled intra-actions (2007), so that walking becomes how the body measures itself against the earth and how the earth is measured against the body through material entanglements, which in Ingold’s terms relates to being an ‘earth-human’ (2020). The research finds different ways to measure these reciprocal²⁷ intra-actions by developing a

²⁷ Reciprocal links to Haraway’s ‘reciprocity’ (2016), which in relation to this research looks at how place and matter affects / affected my walking body, and how simultaneously my walking body / presence within the Taw affected the matter of the estuary. Both were changed through in Barad’s terms the ‘intra-action’ (2007).

series of processes that record the traces of both the human, more-than-human and the non-human. The different processes are set out in Appendix One and examined in more detail in the following chapters. Here I want to further examine *Ground Texture Recordings* as an artistic method developed at the outset of the walks along the Taw, formed *through* walking as a methodology, through the intention of slowing and disrupting my natural walking rhythm in order to tune in to the Taw. *Ground Texture Recordings* as the first process was also entangled in the development of all of the subsequent processes, recording as this process did every walk along the estuary over the six years of research.

The role of *Ground Texture Recordings* within a walking methodology

In very literal terms this process measures the contact points of each walk between feet and ground (see Figures 8 – 10). On the first walks along the Taw, I returned to a method tested during a series of earlier city walks, where I tested attaching paper and carbon to the sole of my shoes (Figure 11). The wet estuary mud meant that a process that had worked on the (mostly) dry, hard pavements didn't work along the Taw, so I explored materials that were more durable. I had the idea of attaching lightweight metal plates to the sole of each shoe after finding the washed-up lid of a sardine can along the estuary in 2015. The metal held a trace of its journey through the scratch and indent lines on the surface. I discovered another unexpected connection to Bennett's writing about things and their vitality years later in 2021 whilst looking back over the research. She says, 'Things, on the other hand...[signal] the moment when the object becomes the Other, when the sardine can looks back' (2010, p. 2). In this way, importantly, *Ground Texture Recordings* was a process co-created through a material encounter along the Taw, a process to attend to the metal in contact with the ground/textures as 'looking back' – a process that was two-way in its formation between the body and the surface. This 'looking back' also relates to the processes as non-human witnesses, which is examined in Chapter Four.

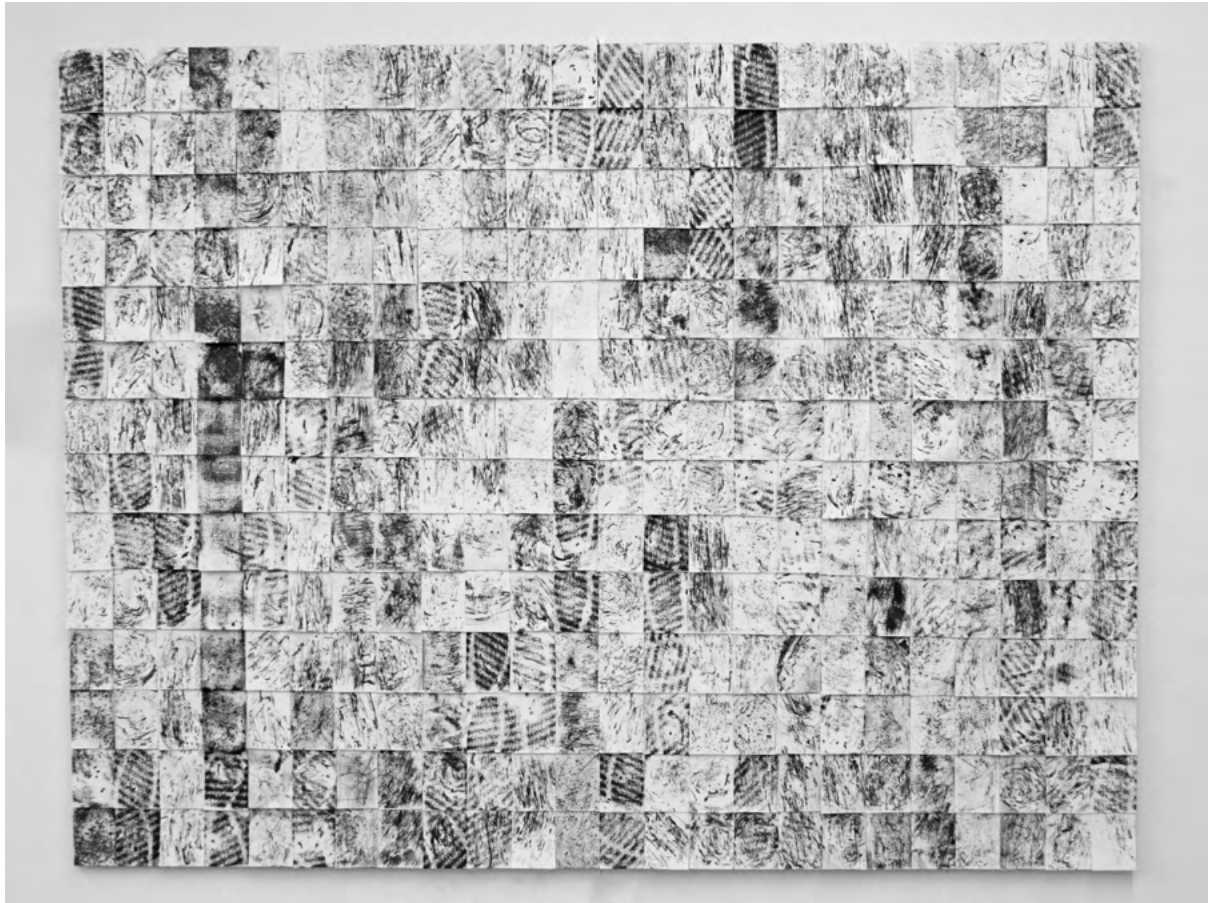


Figure 11: Image of work not included in PhD exhibition but referred to here as context: *A Month of Walks*, an earlier experiment to record the textures of the ground during city walks, carbon transfer onto Somerset, 120 x 90cm, 2009.

The marks that formed into the surface of the aluminium plates attached to each walking boot through *Ground Texture Recordings*, held an imprint that told a story of the passage of time and contact with textures along each walk. These metal plates forced me to slow down and gave a new sound and sensation to every passing footstep, so that a hyper awareness formed at each point of contact between my feet and the ground. I became aware that it held an echo to the enforced slowing down and more tentative steps of the walks in late pregnancy. The use of metal plates became one method of many within the research methodology of walking. They became a way to register Vergunst and Ingold's trace of the imprints on the surface, through attending to the textures of the surface (2008), at the 'interface between earth and air' (2014) in that they made visible the traces of touch between my walking body and the surfaces of the ground and held a register of these

multiple points of contact that emerged over the slow time of the walk (see Figure 12). This is not to say that the plates mediated my walks, but that they formed an experimental mode of recording the textures that will be examined further below.



Figure 12: Image of work in progress along the Taw: removing the metal plates at the end of a walk to form part of *Ground Texture Recordings*, the residues of estuary matter and textures are held on and within the surface of the metal plates, 2019.

The boundaries of apparatus to measure walks

The idea of the interface is something examined by Barad in relation to measurement apparatus and the boundaries of phenomena within an experiment. Barad highlights that there is no ‘hard’ interface between one thing and another. I extend this thinking to the

relationship between my walking body, my walking boots and the aluminium plates attached to each walking boot. Thinking about a coffee mug held in the hand, Barad says 'it is not that there are x number of atoms that belong to a hand and y number of atoms that belong to the coffee mug....there are actually no sharp edges visually either... what one sees is not a sharp boundary between light and dark but rather a series of light and dark bands - that is a diffraction pattern.' (2007, p. 156). I extend this thinking to Ingold's idea of the 'interface' (2014) in relation to the metal plates attached to my hands and feet during the Taw walks, acting as an interfacial register. In Bennett's terms, the metal plates act as one element within an assemblage of vibrant matter (2010). The plates hold the residues of this vibrancy on and within the surface (see Figure 12). Linking this to Barad's thinking, there are no distinct and hard boundaries amidst the mingling matter of the earth, the metal plates, the soles of my shoes, my feet within them.

In the context of the metal plates, once attached to my body, the line between where my body ends, the plates begin and the textures of the matter under hand and under foot are blurred – 'there are actually no sharp edges' (Barad, 2007, p. 156). The edges from one measuring phenomena are entangled with the matter being measured. Through this way of thinking, the metal plates that make *Ground Texture Recordings* and *Scratching the Surface*²⁸ are interfacial registers that are simultaneously non-bounded things acting as both an extension of my walking body and an extension of the textures being measured and a method for making visible the trace of this material intra-action. It is not to say that boundaries don't exist, but that these boundaries are not fixed, nor are they distinct, but instead blurred (Barad, 2007, p. 156). Through the lens of the coffee cup and hand, there are no hard lines between my feet, my walking boots, the metal plates and the earth underfoot – these phenomena hold entangled and shifting boundaries, they hold a connection to Bennett's 'distributed agency' and the vibrancy that emerges through combinations of things acting as a form of assemblage, the outcomes of which can be 'lively' and unexpected (2010). What remains of this process enabled through walking, are the traces held within the aluminium plates forming a visual palimpsest of the textures over time, the palimpsest Massey positions as 'hinting at the possibility of disruption' that holds

²⁸ See Appendix One for further detail about this process.

within it a 'multiplicity' (2012, p.110) just as any given experience of place is multiple in register (see Figure 13). These traces, just like places are not inert, but active and always becoming.

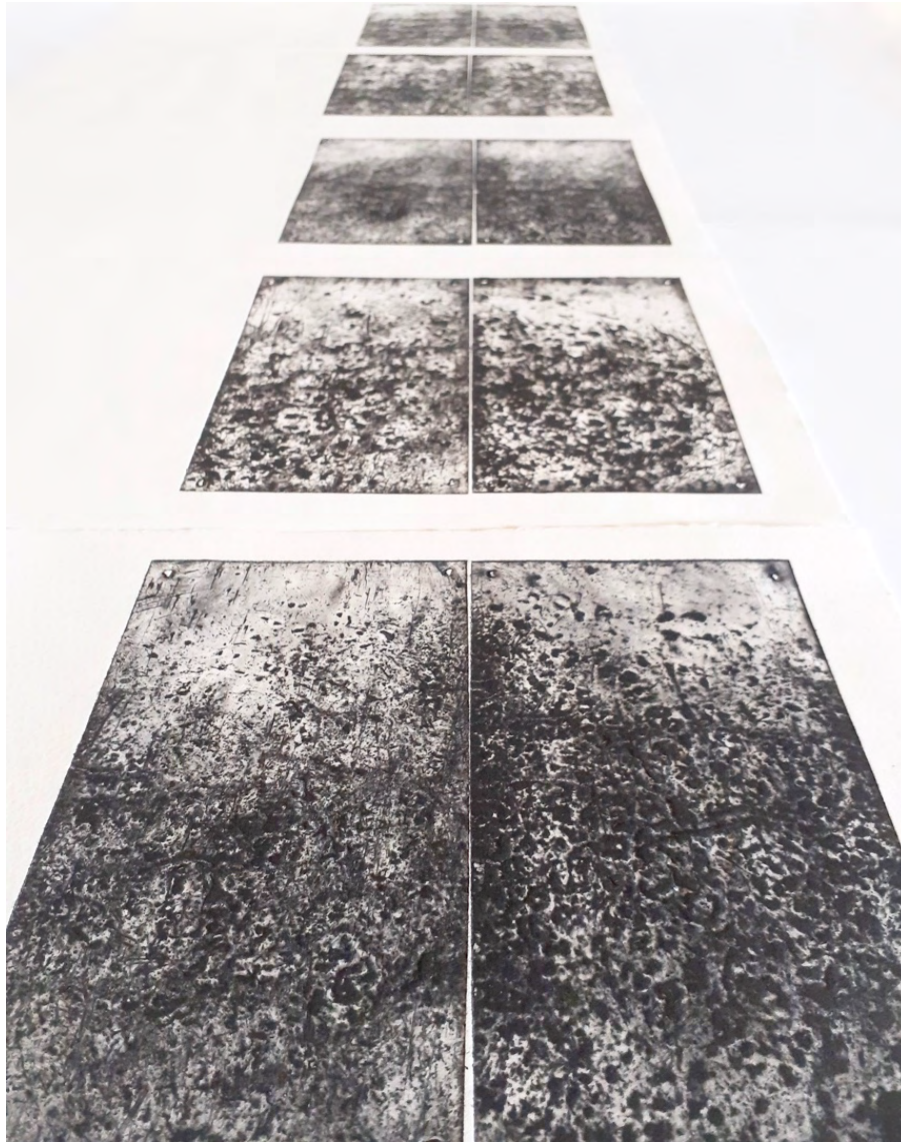


Figure 13: Image of work included in the PhD exhibition: *Ground Texture Recordings* (November 2020). A series of texture recordings made from a walk each day along the Taw and printed with collected earth pigment Bideford Black. The daily sequence shows the array of different textures made walking the same walking route on consecutive days.

Walking as an entangled methodology with 'place'

Walking as a methodology is therefore not a human-centred approach, but a way of exploring the Taw that is deeply entangled within it. A different methodology would have led to different outcomes within the project. Again in Haraway's terms, how we think matters, what we use to think with matters (2016), walking as thinking and tuning into the Taw matters in terms of what matters are measured.

This way of thinking could be extended to the boundaries of a place: where does the Taw of my investigation begin and where does it end? Deep under the ground in a spring in Dartmoor? Or in the rainfall that falls into the ground that works its way through strata and geological time before emerging again at the surface? Similarly does the Taw end at the point where it flows out to the sea? Where exactly is this point and how does the fresh water of the Taw and the salt water of the sea mingle? Is there a hard line to demarcate the boundaries? How do the incoming and outgoing tides disrupt the boundaries of river and sea? Where do the boundaries lie if they exist at all and how might they be experienced? The complexity of place rests within an understanding of the ambiguous and permeable nature of boundaries. Any measurement devices set up to measure the experience of being within places like the Taw are themselves unbounded and entangled with other matter in constant flux. This includes my walking body as another entangled matter in the context of this research and through the lens of Barad's thinking.

Building on Barad and Haraway's thinking, in their exploration of *Creative Engagements with Ecologies of Place*, Modeen and Biggs highlight that 'it is difficult to determine boundaries at all, and instead one must experientially note qualities rather by transitions instead of boundary lines.' (2020, p.213). The work emerging from this project acts as a form of noting the textural and material 'qualities' of the Taw through the experientially embodied methodology of slow walking (see Figure 14).

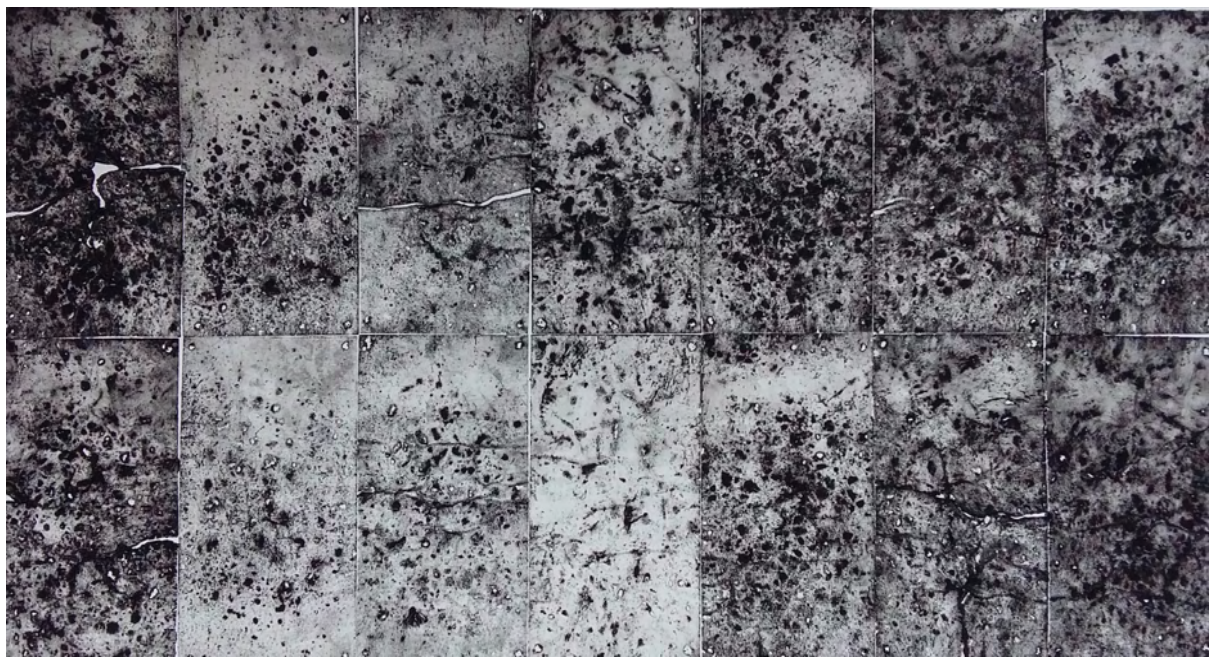


Figure 14: Image of work included in the PhD exhibition: *Ground Texture Recordings ii, seven walks along the Taw, (October 2018)*, Bideford Black Pigment on Somerset, 60 x 30cm.

Walking as an ethical / respons-able methodology

In the understanding of walking as a methodology that is in itself entangled with(in) the places under investigation, there is an important role of this methodology to act ethically and with responsibility (as all research methodologies should) to be attentive to *how* this exploration is undertaken. Haraway places 'respons-ability' as being 'about both absence and presence, killing and nurturing, living and dying—and remembering of who lives and who dies and how in the string figures of natural cultural history' (2016, p.28). Respons-ability holds the human possibility of responding to the more-than-human and non-human. Barad extends this term through the entangled nature of the ethics of research in the *how we know* and the *what we know* (in relation to scientific research). Barad argues that the how and what of knowing are not separate bounded entities, but hold a close relationship that cannot be separated out, referred to as an 'ethico-onto-epistem-ology' with 'ethics, ontology, epistemology not separable'. (2007, p. 90). This research stems from a (slow) walking methodology that opens up encounters within the Taw over time, encounters through a slow tuning in that deliberately aim to hold an ethical sensitivity at their centre. A

sensitivity in *how* to work with the matter of the Taw, in *what* knowledge is generated through these encounters and *how* this knowledge is communicated through the materials of the artworks. I link this notion to walking as a methodology through what Springgay calls 'a kind of affective time that enables researchers to think about futurity not as something elsewhere or separate from the present, but a time that is immediate and intensive.' (2018). Springgay goes on to place the idea of 'respons-ability' as central to the action of walking as research (2018), which connects to Haraway's positioning of the term as a mode of being and 'staying with the trouble' of environmental degradation (2016). The aim of working with 'respons-ability' has been integral in terms of how I have worked with walking as a creative methodology with the Taw, and this will be examined in more detail within this writing in relation to the entangled encounters and processes developed with the estuary (particularly in Chapter Four in the context of *matter maps*).

Walking as a playful and improvisational methodology

Many of my walks along the estuary were alone, but some were with my children, both along the banks of the estuary and in other places. I observed and was a part of how my children interact (intra-act) with this and other places, how they use their whole bodies in active exploration. Almost every surface is touched, jumped on or over, run around, circled back to, there is a constant pushing of physical limits, the push and pull on surfaces. Relating this back to walking research, their walks are not fluid nor a rhythm found, they start and they stop, they run, they walk, they circle back, they amble off course (Springgay and Truman, 2018). As Bennett suggests, this mode of exploration might be a form of childlike active enchantment, an intuitive way to encounter enchantment that children often possess, a way of finding wonder and animation in often unexpected things, in unexpected places, in the stuff of the everyday (2001, 2010). There are constant pauses to investigate something that has caught their eye, the thing is usually picked up, its weight and textures explored through small hands and inquisitive fingers passing it from one hand to the next. The status of the thing moves from the overlooked to the precious.



Figure 15: Observation image: exploring the estuary through hands, bodies, physicality – adopting a playful approach, April 2019. My eldest daughter playing with Bideford Black exposed at low tide, making drawings and rubbings while she walked.

Walking along the beaches that line the Taw, the things they collect may become drawing tools or may be flung into water to create circular waves or carefully stored in pockets to join other precious collections (see Figure 15). I have watched and joined them on many occasions in collecting driftwood sticks on our walks that became instruments to beat the abandoned ships with. Echoes forming from deep inside the vessels that became a source of inspiration for subsequent sound recordings. My children called them the 'pirate ships'. Their evolving graffiti and states of decay held the possibility of fantastical stories, of adventures on the high seas, of buried treasure possibly still to be found within the very shipwrecks before us.



Figure 16: Observation image: exploring the ‘pirate ships’ through physicality and play, April 2017. As our public spaces (in the UK) are increasingly privatised and controlled, these ships hold a sense of freedom and open-ended possibilities, which over the timeframe of the research, seemed to fascinate children and adults alike.

I began to realise that walking along the estuary with my children, gave me permission to be more playful and improvisational in my approaches; to test out actions that Bennett aligns with Adorno’s ‘clowning around’ (1973)²⁹ which holds connections with Haraway’s ‘speculative modes of being’ (2016). A mode of being emerged that was playful and inquisitive. I would stop and feel things that caught my attention, dig with bare hands in mud and sand, collect things, scratch and bang on surfaces. It was a permission to explore with no fixed intention of why and what outcome may emerge, but to improvise for its own sake. The processes hold a record of these sometimes playful encounters with matter that were developed with an often childlike sense of wonder and material enchantment that Bennett links to a sense of ‘thing-power’ (2001, 2010). A ‘thing-power’ as ‘a good starting point for thinking beyond the life-matter binary, the dominant organizational principle of adult experience.’ (2010, p. 20). In this way, a playful approach, like slow walking, became another mode of disrupting the experience of the estuary, to tune into a child-like sense of wonder within and about a place. This enchantment offered a counter to the often heavy

²⁹ Allowing the playful self to encounter things with new eyes and new experiences and to resist the urge of ownership/control as things can never be fully known or understood.

feelings of dread, anger and frustration I experienced on encountering the vast quantities of plastic debris washing in on each tide and floating down stream, and the signs that appeared during the research warning of toxic pollution levels along the Taw. The unlikely material enchantment unexpectedly extended to a fascination with the collected plastic debris that emerged over the course of the research, despite its destructive presence on the estuary.

A diffractive methodology through agential realism to contextualise the research

The research has two methodological frameworks that have developed the project. The first is associated with developing an approach for *making with* the Taw estuary, which is focused on walking as an embodied / sensorial methodology as outlined above. The second is an approach to contextualising the project and reading into and *through* a range of sources and disciplines, to form relationships with artistic practices to generate different ways of knowing. These perspectives on knowing, aim to examine the vibrant matter of place and to investigate the human trace and its entangled meeting points with other matter in a place (specifically the Taw). This methodology is grounded in Barad's 'diffractive methodology' (2007) that itself builds upon Haraway's notions of diffraction as a means to traverse disciplines and generate new thinking that does not reflect (as with reflective or reflexive thinking) but that unsettles and closely observes tiny differences³⁰.

Adopting Barad's diffraction through agential realism (2007) as a framework through which to explore the themes that emerged through the research, has been helpful in developing my understanding of the knowledge that is situated within the artworks. Within agential realism, Barad examines diffractive methodology as a means to read through other academic writing and thinking through the lens of Bohr's philosophy-physics. In this

³⁰ Haraway (1997) notes that "reflexivity has been recommended as a critical practice, but my suspicion is that reflexivity, like reflection, only displaces the same elsewhere, setting up worries about copy and original and the search for authentic and really real...What we need is to make a difference to the material-semiotic apparatuses...diffraction is a metaphor for the effort to make a difference in the world...Diffraction is a narrative, graphic, psychological, spiritual, and political technology for making consequential meanings." (as quoted in Barad, 2007, p. 71). I extend this application to an approach for a material / artistic place inquiry.

research, I am adopting Barad's agential realism as a diffractive methodology through which to examine an artistic inquiry into place and its matter. This approach enables a way to attend to insights that are not limited to a single discipline, but that finds (sometimes unlikely) connections and themes *through* research in other disciplines, *through* other material exploration, so that the outcomes are artistic, but the understandings of these outcomes are generated through diverse fields including geography, physics, anthropology, archaeology, literature, environmental humanities, philosophy, ecocriticism as well as contemporary art practices and discourse. This rhizomatic approach is a way to recognise the multitude of influences that frame our many personal understandings of a place and our identities within it experienced *through* matter; understandings that are fluid and not rooted within the hard boundaries of a single discipline. This offers an explanation as to why the research is not framed through a close investigation into a small grouping of artists working in this field, but instead takes a trans-disciplinary approach that threads through related thinking *about place and matter* from across academic discourse.

Diffraction as a methodology in place of reflection

Diffraction as a methodology is about a close attention to difference, rather than holding up a mirror that suggests a reflection of 'sameness' (Barad, 2007, Haraway, 2004/1992). This attention to tiny differences through matter, explored over time, is central to this research. The research takes diffraction to be a close attention to difference through materiality and place. Diffraction holds a tension point in that whilst the research is *about doing the same thing over and over again* (the walks and the processes), this repetitive sameness of actions is adopted in order to notice the subtle shifts in matter along the Taw. Diffraction as a methodology is about moving away from the 'sameness' of reflective thinking (Haraway, 2004/1992) to enable a mode to tune into 'where the effects of difference appear' (ibid, p. 70). The central aspect to diffraction within agential realism in relation to how the research evolved is framed through Barad's thinking, highlighted in the following passage:

'We are not merely differently situated in the world; "each of us" is part of the intra-active ongoing articulation of the world in its differential mattering. Diffraction is a

material-discursive phenomenon that challenges the presumed inherent separability of subject and object, nature and culture, fact and value, human and nonhuman, organic and inorganic, epistemology and ontology, materiality and discursivity. Diffraction marks the limits of the determinacy and permanency of boundaries.’ (Barad, 2007, p.381).

Through Barad’s agential realist framework, I have examined and challenged these ‘presumed inherent separabilities’ (ibid) *through* the work. In exploring the relationship between my walking body and the particular qualities of the Taw, I ultimately found that the boundaries that I perceived at the start of the project do not exist. That is to say, there is no fixed separation between the *subject* of my own identity and the *object* of the Taw estuary. Similarly, the ‘how we know’, examined through the processes developed in collaboration with the Taw, and the ‘what we know’ held as material traces within the work, do not have determinate boundaries or separation. Both need each other to co-exist, both form reciprocal relationships that are ongoing and in constant flux. Both leave a trace of residue upon and within the other (see Figure 17).

Through this methodology, the research finds no fixed boundaries between human and non-human and more-than-human: the human of my walking body; the non-human of the plastics unpicked from bundles of seaweed, the rusting abandoned structures that line the Taw; the more-than-human of the barnacles felt along the ships, the organisms within the collected earth. At the point of touch over repeated experiments, there was no hard boundary line between hand and seaweed, or between the entangled meetings points amidst bundles of seaweed and discarded plastic fishing twine (see Figure 17), or between feet and ground, hands and abandoned ships. This I align to Bennett’s thinking about ‘the extent to which human being and thinghood overlap, the extent to which the us and the it slip-slide into each other.’ (2010, p 4). What was found and what has been examined closely through the research are the many points of entangled intra-actions with matter along the estuary, of which my walking and pausing body was one element.



Figure 17: Observation image: seaweed and discarded fishing twine in bundles at the high tide line along the Taw, May 2018, this was later untangled with care and carried away from the estuary to form part of *Ghost Plastics*.

Where Barad highlights no separation between materiality and discursivity, I see this as a methodology through which to bring in diverse points of reference through which to explore the themes of the research. A discursive approach to these contextual references brings in counter-cartographies, place inquiry, eco-philosophy, the anarchive, difference and repetition, slow walking as a methodology. These ideas are entangled with the material findings from the project, with the rust and earth, the plastics and the scratched metal plates, to find different ways of thinking and being in the world and different ways of knowing what it is to know about what it is to exist in a place and to shift through ongoing entangled intra-actions with its vibrant matter. The vibrant matter of the Taw formed unpredictable combinations throughout the research, holding forth a strange sense of power and wonder through its very thing-ness (Bennett, 2010).

Chapter one conclusion:

In conclusion, I return to the questions raised in the introduction that have been addressed within this chapter:

- How was walking as a methodology adopted at the start of the project?

Walking holds multiple methodological roles within my practice. In its first role it has formed a methodology through which to undertake research within and with the Taw. The second as a purposeful 'making strange' of my body, to experience this place anew, through slowing down and feeling, to focus attention on each and every step along the estuary and to open the senses. The third was a playful, childlike and improvisational way of walking that holds a close connection to Bennett's vital materialism, itself tied to Adorno's 'clowning around'. This childlike approach led to the invention of processes linked to a childhood intuitive use of materials collected on walks, and a desire to feel a place through all the senses, running hands along each ship, untangling each piece of plastic from the seaweed bundles, rubbing rust between fingers to stain them, smelling the metallic trace left behind in the backdrop of the salt air. These different facets of walking as my methodology have gradually formed over the time of the research a series of interrelated processes through which multiple interlinked series of artworks emerge. In this way walking became a mode of tuning into the Taw and exploring the material meeting points and their vibrancy (Bennett, 2010).

- How and why did this evolve?

The chapter explores 'slow' walking as a methodology emerging from the slowing of my body through pregnancy that led to a break in my walking rhythm and to making strange my own body and the once familiar place of the Taw. Attaching metal plates to each walking shoe to form *Ground Texture Recordings* aimed to force my body to slow down as it had during pregnancy in order to notice the overlooked aspects of the matter along the estuary, and my entanglements with it.

- What contextual research supported this methodology?

The chapter highlighted the aspects of Springgay and Truman's walking methodologies (2018) as a mode of research that have been significant in shaping walking as a methodology, with Solnit (2007) and Abrams (1997) writing in relation to slowing and connecting with places through the senses. Bennett's thinking was tied to playful and improvisational modes of slow walking as a mode to discover and tune into the agency of the 'things' encountered in their (unexpected) assemblages (2010).

- What other methodologies became relevant, why and how? (again with contextual research to support the selection)

Chapter one looked at the role of a second research methodology that shaped *how* I approached the contextualisation of the project through a diffractive methodology developed in relation to Barad's agential realist framework (2007), linked to Haraway's 'diffraction' as a more 'subtle' mode than reflection that makes space for 'difference' (2004/1992, p.70). This aimed to notice the small details emerging through the research and take a trans-disciplinary approach and a 'reading through' as a range of contextual focus points.

Chapter Two: Entangled encounters with vibrant matter along the Taw (making *with* place)

Chapter summary:

This chapter examines 'place' as an entanglement of human, more-than-human and non-human worlds that are constantly in an ambiguous state of becoming. It explores the discovery of an array of things (organic and inorganic) along the estuary that are co-existing in complex and unpredictable relationships in flux, holding a sense of Bennett's vibrancy in their materiality and in their potential 'thing-power' (2010). This is connected to Barad's entangled intra-actions in their worlding (2007) and Haraway's complex systems of 'making with' / 'worlding' with that she calls 'sympoiesis' (2016). These themes are examined *through* the artistic processes developed in collaboration with the plastic debris collected along the estuary. The entangled nature of all relationships co-existing in place, is identified in relation to horizontal ontologies (Latour, 2018; Morton, 2018; Harman, 2018), or a non-anthropocentric approach to place inquiry through artistic research (Barad, 2007; Bennett, 2010; Haraway, 2016).



Figure 18: Observation image: the rust and dead barnacles flaking off the smaller of two abandoned ships along the Taw leaving marks on the sand below, October 2018. Over the course of the research, the textures of the ship have become smoother, as the barnacles have died and flaked off (now that this ship is mostly out of water). These small changes have been recorded through the process *Scratching the Surface*.

Extract from field notes February 24th 2021

*She tells me stories of her life, stories of the Taw, stories making strange shapes wading
through the descending fog of dementia
The stories of war time escapades
Tea dances and chaperoned walks
Night times spent on railway platforms as bombs fell from the sky
There are stories missing; babies, husbands, fathers, grandfathers not mentioned in the long
recollections of lives past
On different days and in different seasons reminders will remind us of the people she was,
the people we were, the things that mattered, the things that matter still
The magnifying glass to read the paper, the binoculars to see the view
The radio times highlighted with programmes to watch
The box of newspaper cuttings to remind her to remind us of things forgotten
The tropical heat of the gas fire, the prism colours of light making its way through the glass
crystal bobbing above the booming telly
The sponge cakes and the tiny saucepan that I held in my hands on each and every visit.*

*I remember once a bird had crashed into the living room window.
Every detail of every feather was printed onto glass, beak and eyes holding the negative
space of the space of a life that had passed.
The imprint was there, distorting views back over the Taw held within the middle distance
The bird had gone, mattering amidst matter entangled within the long grass under the
shade of the old oak tree.*



Figure 19: Image of work not included in PhD exhibition but referred to here as context: *No Road Here - Imber Perimeter Line Walks* (2015), 210 x 150cm. One of the paintings in response to my early walks on Salisbury Plain from 2014 – 2015. These paintings contained ground rubbings and satellite imagery of the tank tracks from MOD use of this land.

The start of the research project

In the early stages of the project, I exhibited a series of paintings created in response to walks on Salisbury Plain (Figure 19). These walks were cut short by the birth of my second daughter, making walking and travel to the Plain difficult. Through not being able to walk on Salisbury Plain, and through looking at the paintings in an exhibition space, I began to see that a disconnect had opened up between the ways of working, the place and my walking body. The process had become more about making a series of paintings *about* the place, rather than a very direct response to the place (made through working *with* the materials of the place) begun in the moment of being there. I began to recognise that this was a very human-centred approach. It was an approach that was not taking into account all of the matter I was working *with* in more collaborative, open ended, less anthropocentric and controlled terms. This understanding marked a significant shift, and in many ways marks what I think of as the ‘real’ start-point of the research.

The relationship of this research with artists working with embodied and material methodologies

As explored in the previous chapter, when the walks began and in the early stages of the project, I saw myself as an individual, walking and working alone and collecting ‘data’ (ideas, stories, drawings, photos, rubbings) about a place that I would then bring back to the studio to work with. This held links to methods employed in geography fieldwork. It also connected to methods employed by a grouping of artists that I was investigating at the start of my PhD, working with landscape, human trace and layers, to explore history/time/place. This grouping included John Virtue’s early multi-panel works from his postal rounds walking around Green Haworth (e.g. *Landscape No. 98*, 1990 - 91), Mark Bradford’s paintings with collected free-ads from his LA neighbourhood (e.g. *Los Moscos*, 2016), Ingrid Calame’s use of tracings of human spills along the LA River (e.g. *#180 Working Drawing*, 2005 – 2011 series), and Julie Mehretu’s use of layers and different scales to hint at the passage of time as part of her two-year Berlin residency (e.g. *Fragment*, 2008, 2009, from the *Grey Area* series).

My thinking gradually shifted through a closer (slow) engagement with the matter of the Taw towards an approach that became a non-anthropocentric *making with* the estuary. As the Taw walks began, I was exploring the work of Daro Montag's buried films (*This Earth*, 2007) and Michelle Stuart's earth and seed works (*Serpent Mound, Ohio*, 1978-79)³¹.

Gradually through the material conversations with the Taw, the influence shifted away from closely examining other artists working with place, matter and mapping towards the matter of the Taw itself and a closer exploration of Barad, Bennett, Haraway and Ingold's thinking, as set out in the introduction and further below.

Through walking within the Taw, I recognised the need to move away from a close reference to specific artists, in order to allow my own research the time and space to emerge *with* the estuary and its matter as co-creator, rather than specific artists or artworks as the main points of influence to respond to and with. The research emerged not as referent to specific contemporary art practices, but in collaboration with the watery place of the Taw *through* matter.

Looking back at the trajectory the research has taken, I situate it within a field of trans-disciplinary artists and researchers working closely with materiality / place (in forms that shift according to the nature of the matter they are engaged with), with particular focus on touch and embodiment. I align this approach to Mary Modeen and Iain Biggs' extended idea of (slow) fieldwork as a mode of creative practice amidst slow residencies in place. This fieldwork that is situated within and recognises that we are part of the matter we explore. It holds modes of attentive care and co-existing within the environment as learned from indigenous communities that live in ways that 'sustain a balance among humans and non-humans alike' (2020, p. 219).

³¹ See Appendix Two for a survey of artists working with place, walking, mapping and materiality in relation to the earlier stages of the research.

A performative/experimental approach

The Taw research takes an iterative and open-ended approach, which allows a space for the processes to evolve and shift *with* the materials, *through* the passage of time. Since the first walks along the Taw, my approach has been to work with the materials of the estuary through an extended (sensorial) mode of close tuning into the materials, to develop processes that foster and record this attunement as to how the materials (and my body) are mingling together. This is not to say that the processes attached to my body generate a performance, rather that they are *performative* within the framework of agential realism³².

This agential realist understanding of performativity applies the processes as methods to break down the human/non-human, nature/culture, subject/object, knower/to be known divides that Barad sets out (2007). This places the materials and body in active and ongoing sensorial conversations with each other (rather than matter being inert). The processes in this mode afford 'different kinds of knowledge-making practices' (Barad, 2007, p.90).

Ground Texture Recordings and *Scratching the Surface* do this through blurring the boundary between touch of hands/feet and the things touched, gravitational pull, resistance, kinetic energy and matter all forming together in processes that generate a hybrid human/non-human/natural/cultural/knower and unknown assembled thing, as a hybrid of Barad and Bennett's thinking (2007, 2010). The residues of this assembled thing are held within the resulting work (see Figure 20).

³² Barad places performativity as posthuman in relation to the actions of the human / nonhuman intra-actions taking account of 'matter's dynamism' (2007, p. 135). This approach 'advances a performative understanding of technoscientific and other naturalcultural practices, including different kinds of knowledge-making practices.' (2007, p. 90).



Figure 20: Image of work included in the PhD: *Ground Texture Recordings iii, seven walks along the Taw*, (January 2019), Bideford Black Pigment on Somerset, 60 x 30cm.

Trans-disciplinary and Transmaterial methods

In this way, the processes are experimental matter-measuring devices, and *actively* a part of the material intra-actions they are measuring (Barad, 2007). This connects to ‘transcorporeality’ as an approach, that building on Alaimo’s thinking (2010), for Springgay and Truman, ‘posits humans and non-humans as enmeshed with each other in a messy, shifting ontology. Transcorporeality cleaves the nature–culture divide and asserts that bodies do not pre-exist their comings together but are materialized in and through intra-action.’ (2017, p.3). The work that emerges through this approach is not aligned to a specific genre of work or artistic discipline (in terms of painting, printmaking, installation, performance etc). The processes are perhaps closest to an expanded understanding of drawing as an unfolding, experimental process. The lines of drawing holding a relationship to the lines of walking and an alignment to walking as thinking and drawing as thinking; a thinking that is open ended and worlding (Ingold, 2013).

My approach through *listening to the materials* has been improvisational and low-fi, to tune into the matter within the moment(s) of the encounter. The listening is an expanded understanding of listening – a listening that is sensorial – listening with and through all of the senses. Sometimes this expanded material listening has been explored through experimental printmaking techniques, drawing, painting, installation/assemblage – in a disciplinary straddling that has allowed a freedom to focus on the embodied/materiality relationship that holds above all the residue of material encounters held as traces of marks made on and within the surface of the work (as evident within Figure 20). I think of it as a form of ‘assembled’ practice – a creative practice that uses improvisational techniques as a mode of attunement. This holds a close connection to Bennett’s ‘assemblage’ as a way of tuning into (the estuary’s) vibrant matter which attends to a ‘transmateriality’ moving beyond the anthropocentric ‘toward trans as assemblage, affect, movement, and intensity.’ (Springgay and Truman³³, 2017, p. 3).

Developing collaborative, reciprocal artistic processes with the Taw

The *Ground Texture Recordings*³⁴ became the first process developed with the Taw that held a sense of reciprocity of mark-making as a form of conversation, and was developed collaboratively with the textures / matter of the ground in the Taw intra-acting with the weight of my walking body (Figure 20). Walking with metal plates underfoot, developing the *Ground Texture Recordings*, generated a heightened awareness of the feelings of the textures underfoot shifting along the walk, and a sense of the textural materiality of the Taw. I began to see my walking body less as a distinct and independent being, and more as a joint thing intra-acting with other things / matter along the Taw. This understanding emerged through handling earth, washed up plastics, the rust flaking off the abandoned ships, the dying barnacles, and the bundles of seaweed.

³³ As Springgay and Truman state, this follows the thinking of ‘scholars like Hird, Puar, Chen, and Colebrook’ (2017, p.3).

³⁴ See Appendix One for full description.

The approach formed too, through reading texts relating to entanglement, materiality (Barad, 2007; Ingold, 2010; Bennett, 2010) and 'making kin' (Haraway, 2016) which will be expanded upon further in the writing that follows. Through my walks, and through slowing and sensing, an understanding formed that I was entangled within the Taw, both during the walks, and later away from the estuary through the memory of the walks that held a residue within my senses, muscle memory, and through the materials collected along the estuary that I continued to explore through touch. I became aware that I was changed through these material encounters, and that this change was two-way, through traces of my walking / sensing body that remained along the Taw.

Artistic research entangled with matter

Tim Ingold's invitation in *Bringing Things back to Life; Creative Entanglements in a World of Materials* (2010) to 'follow the materials' in response to Deleuze and Guattari's 'matter-flow' became a mantra during my early walks along the estuary. It formed a focus to tune into the place and its matter-flow. As Lange-Berndt asks, 'What does it mean...to follow the material and to act with the material?' (2015 p.13). I weighed up this question as I walked, and started to make a slow space to notice how different materials behaved, and what this behaviour pointed towards and where and how my body was tangled within this behaviour. Gradually rather than coming with an intention to make paintings in response to a place, instead the ground of the project shifted. What emerged was a sense of working *with*, through closely noticing the stuff of the Taw, the stories it was telling, and how my own body was entangled amidst these matter-stories.



Figure 21: Observation image: as the river banks are eroding with high tides and ‘peak rainfall events’ I noticed that the silt was washing away and pockets of Bideford Black were being unearthed along the estuary. This seam is around 350 million years old and makes a very dense black pigment that can be made into printing ink and makes *Ground Texture Recordings* and *Ghost Plastics*.

This held a close connection to Haraway’s ‘sympoiesis’ as a mode of ‘making with’, *through tuning in*, that attends to the complex systems and meeting points within material entanglements (2016). This understanding marked a pivotal shift. What it meant was that the often strange combinations of materials that I experienced through my senses along the Taw, pointed towards ways of working with them; ways that informed the form the processes took to measure these intra-actions. Bennett asks, ‘what method could possibly be appropriate for the task of speaking a word for vibrant matter?’ and further ‘how to describe without thereby erasing the independence of things?’ (2010, p.xiii). The processes that have emerged offer possible methods in answer to these questions. They are polyvocal in nature (with the ‘voices’ being material voices expressed in the non-human language of matter), so that in conversation they aim to hold forth the entangled and constantly evolving nature of matter in places.



Figure 22: Observation image: a section of cliff along the Taw that is in the process of collapsing through the erosion of storms and high tides, 2020. The vibrancy in the array of different earth minerals and pigment colours in one tiny section of river cliff has been a source of fascination that is evident in the work.

Artistic processes as experimental ‘measurement apparatus’

I position the processes as an experimental form of what Barad calls ‘measuring apparatus’ (in relation to quantum physics experiments, 2007). Thinking about the processes as a form of experimental apparatus expands Barad’s writing about the role of apparatus as a mode of measurement within and as an entangled part of a scientific/quantum experiment. This thinking moves the idea of apparatus away from purely scientific terms and into creative/artistic apparatus through which to examine ‘place’. Barad locates apparatus as a part of the entangled mix of the matter that they measure, saying that apparatus ‘...are themselves phenomena – the result of intra-actions of material-discursive practices.’ (Barad, 2007, p. 389).

The processes developed within this research are methods that aim to speak ‘a word for vibrant matter’ (Bennett, 2010, p.xiii) by acting as creative methods to measure the entangled intra-actions with the matter of the Taw. With an understanding that each process, acting as a measurement apparatus, is itself another matter that is part of the many entangled meeting points with the matter it measures (Figure 23). By this, I mean that as a researcher, I selected particular materials to measure different material intra-actions within the Taw. This selection was made by observing the material intra-actions already unfolding on the estuary, but their selection became an active part of the creative experiment and therefore did not sit *outside* of the experiment. My body too, is a part of the creative experiment and its trace alongside the trace of other matter, is held within the works that emerge. There is a complex sense of entanglement recognised in this way of working with(in) the Taw, that resonates with Barad’s examination of quantum experiments. These are perhaps two unlikely meeting points acting as a diffractive lens through which to understand the nature of this research.



Figure 23: Image of work in progress along the Taw: *Scratching the Surface* (October 2017), pushing the aluminium plates under hands along the length of each abandoned ship to measure the textures. Over the course of the research, the smaller abandoned ship (newly dumped on the Taw at the start of the project) changed from smoother textures because of the seaweed entangled within the barnacles on the hull. Now mostly out of water, the seaweed and barnacles began to die and flake off, so that the textures became rougher as barnacles were exposed and then smoother again as they flaked off. These minute shifts are recorded through this apparatus repeatedly.

Barad's writing exploring the personal role of the researcher in selecting the apparatus, in being involved with the experiment, in interpreting the measurement devices, holds an application in creative terms that I apply as an approach for this research. Barad highlights that the researcher and the measurement apparatus as an entangled part of the things being measured, does not make for a less objective and more subjective approach to research (2007). Instead Barad highlights that taking into account *all* of the phenomena tangling together, makes for a more objective approach. Not one that is human centred, but that instead recognises the human as an entangled phenomena within the research and not individually bounded as a distant observer. We can only experience the world through our bodies as an active part of the world, entangled with other matter. In this way, as set out within the introduction, Barad makes a clear argument that all research, indeed the most objective approach to research, is personal and should be recognised as such (2007). This has become central in understanding that the personal nature of this research is not a weakness with no application to others, but a strength in acknowledging the personal as nested within the 'full set of practices' that investigate the Taw – my own body included (Barad, 2007, p.390).

The processes developed collaboratively with the Taw are not exhaustive methods, but point towards a creative mode of exploring 'place'. This approach offers a record of a close engagement with matter in all its vibrancy (Bennett, 2010). It recognises place as ambiguous, multiple, never fixed, always becoming, (Massey, 2005). Place is an entanglement of matter in a constant process of intra-acting within and as a part of itself (see Figure 24). The intra-actions are the 'doing' of a place tied to notions of 'agency [which] is a "doing" or "being" in its intra-activity. It is the enactment of iterative changes to particular practices – iterative reconfigurings of topological manifolds of spacetime-matter relations – through the dynamics of intra-activity.' (Barad, 2007, p. 178).

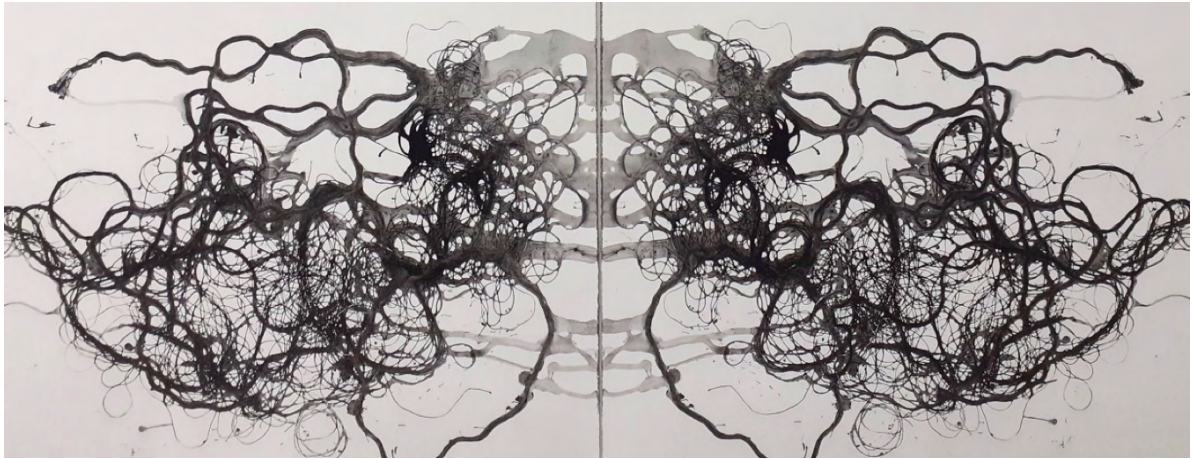


Figure 24: Image of work included in the PhD exhibition: *Ghost Plastics (part four, river water and Bideford Black earth)*, 2021, Somerset, 45 x 65 x 2, 2021. The process of collected washed up plastic fishing twine along the Taw, coating it in Bideford Black earth and river water and then applying pressure to leave a residue and emboss within Somerset paper, holds a record both of the plastics collected, but also of the iterative changes to the same bundle of plastics recorded repeatedly over time. The plastics hold their own agency – they bend and flip in ways that cannot be controlled. Each river water record is using the same bundle of plastics, and yet each is unique because of the shapes formed and the tangled relationships between plastic strands.

The works are formed through iterative processes that hold a record, or in Bennett's terms a 'description' without 'erasing the independence of things' (2010, p.xiii). These records are formed at the intersections between space, time and matter (that I align to Barad's spacetime-matter), acting together and upon each other. The entangled points at which the earth, river water, plastics and human pressure meet within a space at a given time is evident on the surface of the paper in *Ghost Plastics* (Figure 24). The entangled points at which the scratch marks, indents, weight of my body and earth of the estuary or rust of the ships is evident on paper in *Ground Texture Recordings* and *Scratching the Surface (Abandoned Ship Register)*. The entangled points at which the air, sea, salt and metal intra-act on the plates on each ship and their transfer onto paper is evident in both *Rust Recordings* and *Trace (Abandoned Ships)*³⁵ (Figure 25). All of these works hold a trace of different material intra-actions on and within their surface. It is interesting to note that what I as an artist-researcher set out to measure through different processes, was not

³⁵ See Appendix One for full details of all artistic processes.

always what was measured through these intra-actions. The outcome was not controlled by me, the experiments always surprised me, the traces held within each work were always unpredictable in nature as the agency was 'distributed' in unexpected ways (Barad, 2007, Bennett, 2010).



Figure 25: Image of work from the same series as work included in the PhD exhibition: *Trace (Abandoned Ships)*, installation view, *A Gathering of Unmasked Possibility*, Centrespace Gallery, Bristol, October 2019. Rust residue on Hahnemuhle paper, rust fragments, wooden shelf, 80 x 120cm x 2.

Material intra-actions that do not have pre-existing boundaries

The unexpected outcomes of the mingling of matter and its agency moved the research away from my human-centred control of painting on canvas, towards making visible a range of materials encountered along the estuary, measured through 'apparatuses' attached to my body or to structures along the Taw, or carried away to be explored further when I could not be on the estuary. As Ingold says '...we absorb into our ways of working a perceptual acuity attuned to the materials that have captured our attention. As these materials vary, so does the experience that comes from working with them. Or in a word, materials and

experience *correspond*.' (Ingold, 2021, p.42). The sense of correspondence of materials and experience I align to a sense of the entangled intra-action in Barad's terms (2007). These intra-actions do not have pre-existing hard boundaries, but the boundaries shift according to the nature of the intra-action, and these tiny shifts are measured through the processes developed and repeated along the Taw. Different apparatus foster a different knowledge of the Taw. What we know is shaped by how we set out to know it, and this knowledge shapes our human understanding of the world and our behaviour within it. The understanding I have of the Taw is specific to the experience of walking there at a given time, intra-acting with matter through metal plates attached to feet, hands and ships (Figure 26); through handfuls of plastics unpicked slowly from bundles of seaweed, earth rubbed between finger tips. Barad says:

'Which shifts occur matter for epistemological as well as ontological reasons: a different material-discursive apparatus of bodily production materializes a different configuration of the world, not merely a different description of a fixed and independent reality. We are responsible for the world of which we are a part, not because it is an arbitrary construction of our choosing but because reality is sedimented out of particular practices that we have a role in shaping and through which we are shaped.' (2007, p. 390).

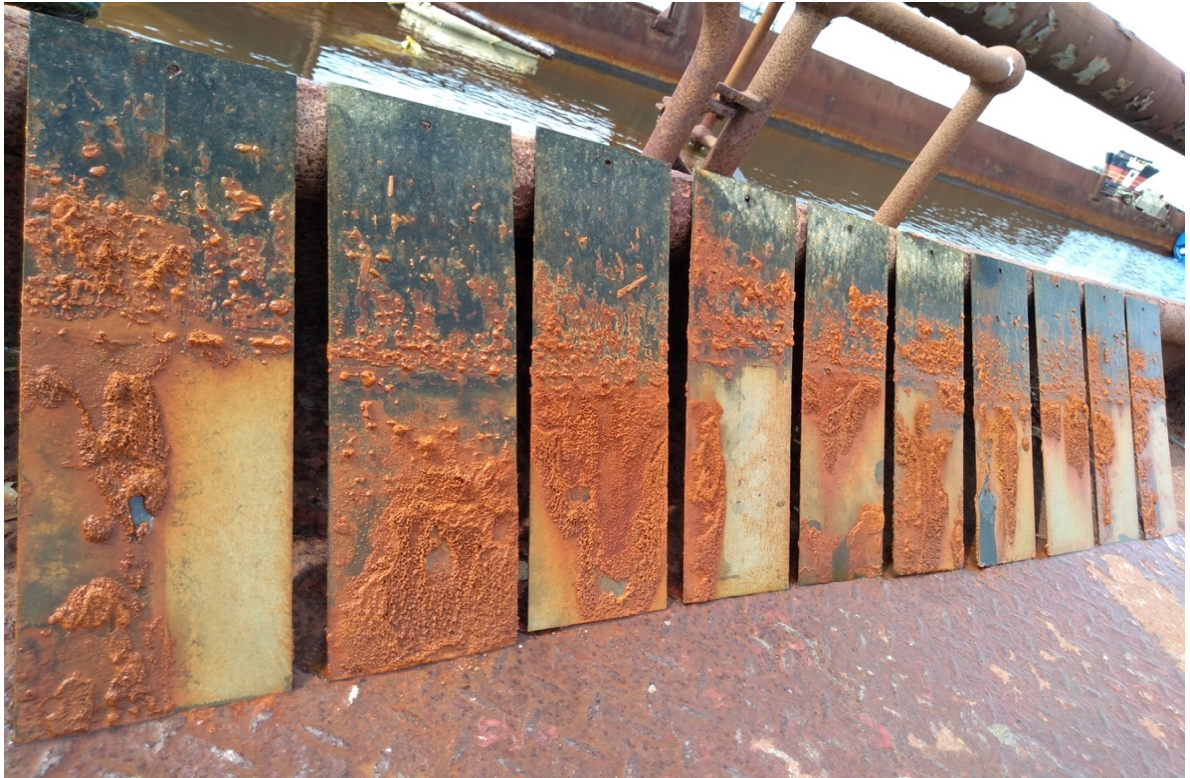


Figure 26: Image of work in progress along the Taw: *Rust Recordings* (2019). These steel plates were attached to the smaller abandoned ship for 6 weeks and are shown here on the ship. The material changes are evident on their surface – acting as a register of the passage of time, and the weather conditions (rainfall, storms, high tides, winds in particular changed the nature of the rust over the course of the research). At the point of collection, a new set of plates were left behind on the ship as a recording device. The plates hold a material knowledge of the estuary that sits within this artwork.

Materials in flux / the non-fixed nature of materials

Ingold highlights too, the non-fixed nature of ‘reality’, and I position the research as a series of methods that work with(in) the non-fixed, shifting nature of the materials along the Taw, materials that are ‘active...because of ways in which they are caught up in these currents of the lifeworld.’ He goes on to say, ‘The properties of materials, then, are not fixed attributes of matter but are processual and relational.’ (Ingold, 2007, p.1). The artistic processes offer approaches to work with and within the ‘currents of the lifeworld’ (Ibid) because they are situated within the lifeworld of the Taw, as an intra-acting material phenomena operating as ‘different material-discursive apparatus’ (Barad, 2007, p.390). The works that stem from the ‘relational’ processes (Ingold, 2007, p.1) are ‘iterative’, to attend to the ‘iterative changes’ of

matter (Barad, 2007, p.178). The residues of matter are still active, the materials (earth, paper, rust) are not fixed, but left to curl, flake and crumble (Figures 25 – 27). The repetition of each process is a different material intra-action at a particular time, and the processes offer a trace of the minute shifts in the marks made through these intra-actions, creating a ‘different configuration of the world.’ (Barad, 2007, p.390). The work develops a ‘different configuration’ of the Taw, attending to minute material shifts over six years, that hold a particular epistemological as well as ontological relevance.

The knowledge generated through this way of working can be taken to other (watery or not) places, as an approach to be shaped in collaboration with each place, to hold a record of a close engagement with the entangled intra-actions of particular matter, particular to the place over a period of time. The ‘what’ of the knowing is held within the work that I position as *matter maps* of the estuary (to be investigated further in Chapter Four). The ‘how’ of the knowing is held with the series of processes developed in (slow), embodied collaboration with the estuary through repetitive ways of working (investigated in the following chapter in relation to Deleuze’s *Difference and Repetition*, 1994).



Figure 27: Image of work from the same series as work included in the PhD exhibition: installation image of *Trace (Abandoned Ships)* in Centrespace Gallery, Bristol in *A Gathering of Unasked Possibility*, October 2019. The traces of rust transferred from *Rust Recordings* is unstable and left to flake off the surface of the work over the course of its hanging. The rust is caught on shelves below the work on paper.

Material and human agency

In relation to the research as a mode towards 'following the materials' (Lange-Berndt, 2015 p.13), the agency of the materials in combination with my own human agency is important

to attend to. Agency as a term is complex and contested within new materialist thinking (Colman, 2018). Human agency in relation to conscious and subconscious actions and the structures of power that we as humans live within would take me into a very different research project. I want to recognise this complex field of research, but make clear that, for how this project developed, I adopted an understanding of agency most closely aligned to Bennett and Barad's interpretation, understanding agency as 'an enactment and not something someone has' that is 'distributed over nonhuman as well as human forms' (Barad, 2007, p. 214), which Bennett refers to as 'distributed agency' (2010). I have therefore taken forward the term 'agency' in relation to the project, as a non-anthropocentric agency. This is not to mean that materials have individual control over an outcome nor that they act as distinct things or objects, but that they are active participants in a situation / place / time, mingling amidst other things (human, more-than-human, non-human matter).

In Ingold's terms, the 'properties of materials' (a term he uses rather than 'agency'), are in a process of 'constant generation' (2007, p.1). For Bennett, 'agency itself is located in the complex inter-involvement of humans and multiple nonhuman actants, which together form an effective assemblage.' (2009). Agency is understood within the research as an intra-action (Barad, 2007), which I align with Bennett's 'assemblage' as 'a configuration of an ontologically diverse range of actants, of vital materialities of various sorts that produce effects.' (2009, p. 3). This ties to Ingold's thinking in relation to the processual and non-fixed nature of materials and place (2007, p.1). Through this thinking, agency is complex and distributed, it is entangled and vibrant, and the outcomes are unpredictable. Slow walking is a methodology to tune into this agency in order to explore the trace of its vibrancy visible across human and non-human forms. This is apparent through marks registered within the processes (with processes as experimental measurement apparatus, see Figures 26 and 27).

Importantly, this interpretation of agency does not aim to diminish human responsibility for the impact of human actions on the planet. Barad cautions that 'the acknowledgement of "nonhuman agency" does not lessen human accountability; on the contrary, it means that accountability requires that much more attentiveness to existing power asymmetries' (2007, p. 219). As a mode of thinking that closely aligns to Haraway's sym-poietic 'staying

with the trouble' (2016), we (humans) need to understand that in existing 'with/in and as part of' the worlding world, "'we" are not the only active beings' (Barad, 2007, p. 391).

Through slow and careful approaches to intra-acting with the matter of the Taw, the research has held as central, the aim to act with care and consideration to develop an understanding of what intra-acting with matter is and can be. This is looked at more closely in Chapter Four in the context of 'thinking critically' about the impact of 'power asymmetries' (Barad, 2007, p. 219) of land ownership and control through structures of mapping. Importantly, through the material encounters, I have formed a greater understanding of the heavy impact of human trace / action (including my own human trace / action) on the landscape of the Taw (Figure 28). This approach can be applied to other modes of being in other places with the aim of fostering a greater responsibility.



Figure 28: Image of work in progress: working with collected Bideford Black earth pigment with a pestle and mortar, 2020. The project has aimed to act with care and responsibility so that only a small handful of earth was collected on a walk. The earth collected was not excavated, but taken from eroded earth at the base of the river cliffs before it was washed out to sea at the next high tide. This careful approach aimed to attend to the erosion, rather than be a cause of it (2019). This approach developed an awareness of the fragility of topsoil in particular within our ecosystems, examined in detail in *Soil Culture, Bringing the Arts Down to Earth* (Lascelles, Adams, Montag & Holden, 2016).

Relating this to the experiences generated through many walks along the estuary, observing, feeling, smelling, sounding out, the things I encountered could be the same things, even in broadly the same combinations (for example plastic fishing twine tangled with seaweed and mussels – Figure 30). At different points in the tidal cycles, in different weather, light, time of day, atmospheres, these combinations create different outcomes. These shifts in matter are all part of the creative experiments. The outcomes may be the shapes made and left imprinted on the sand, or the ease with which the plastic could be untangled and detached from the seaweed allowing the next high tide to take the seaweed back into the estuary. It may be the formations of the sand dunes around and over the plastic bundles as they created small raised points along this landscape for wind-swept sand to rest upon. In this way, the affects of the things when combined together, make this landscape in its ever shifting and complex assembled formations.

Understanding entangled matter in non-romantic terms

It is important here to emphasise that ideas around co-existing with place and co-creating with it are not romanticised through the lens of familiar tropes from the wellness industry of ‘going into nature’ or ‘experiencing the wild’ or ‘breathing in the clean sea air’ amongst others. This does not aim to diminish the growing body of research supporting the positive impact of ‘nature’ on mental health, but to recognise firstly the monetisation of these actions associated with the wellness industry within a capitalist framework³⁶, and secondarily that ‘we’ humans *are* nature – we are not a separate bounded entity (Barad, 2007). As my thinking through making developed, the more I walked, the more I entangled with the matter of the Taw through my senses, the more I noticed, the more I understood the extent of plastic and particulate pollution, raw sewage, chemical and farming run-off in our rivers. The air we breathe, the earth underfoot, and the food we eat all containing tiny

³⁶ An economy worth \$4.5 trillion globally, <https://globalwellnessinstitute.org/press-room/statistics-and-facts/> (accessed April 2021).

particles of plastics which enter into the food chain and so into our eating and breathing bodies. The more it became apparent that there was no separation between body, place and matter, that ideas of 'nature' within the Anthropocene are complicated entanglements of matter and human impact.

We are not just 'walking, talking, thinking soil' in the artist Daro Montag's words (2007, p.20), we are walking talking plastic and particulate pollution, the by-product of our human age of the Anthropocene. A recent study even found microplastics on the foetal side of the human placenta³⁷. As Modeen and Biggs highlight: 'We are the places we inhabit; we are not separate from, but intrinsically a part of, the intermeshed web of matter and energies of which we are a constituent part.' (2020, p.214). Understanding that we are a 'constituent part' of 'the places we inhabit' (ibid) is complex through the unfolding understanding of the climate crisis. 'The places we inhabit' (ibid) are changed by human consumption, and we humans are changed by these effects. If then there is no easy separation or boundary, but as Barad (2007), Bennett (2010), Haraway (2016) and others highlight, in fact a mingling and muddling of matter and a constant passing from one source to another with residues forming along the way, then our walking bodies, my walking body is in itself a kind of assemblage of organic and inorganic matter, pollutants from the air, from the sea, from the river. Ingold highlights the permeable nature through which substances mingle:

'...the world of the open can be inhabited precisely because, wherever life is going on, the interfacial separation of earth and sky gives way to mutual permeability and binding. For what we vaguely call the ground is not, in truth, a coherent surface at all but a zone in which the air and moisture of the sky combine with substances whose source lies in the earth in the ongoing formation of living things.' (2010, p.6).

³⁷ <https://www.sciencedirect.com/science/article/pii/S0160412020322297> (accessed June 2021).



Figure 29: Observation image: human / pet debris along the banks of the Taw (2019). The area neighbours a Site of Special Scientific Interest and is a Biosphere, but signs appeared in 2019 warning the estuary is now too polluted to bathe or paddle.

Ingold's (non-anthropocentric) anthropological approach, has a lot in common with Barad's non-separation of matter through her agential realist framework (2007). I take this permeability further, and move it towards the uncomfortable understanding that in an era of Anthropos, it is not just air and moisture that combine, but also the pollution as a direct result of human actions within both that are entangled within a contemporary understanding of 'place', and within the things that form the place and the bodies of all species as we navigate about our daily lives. This knowing forms a strange assemblage (Bennett, 2010). These things are leaving an indelible layer on this earth as a result of human existence and within human and more-than-human cells (see Figures 29 and 30). It is a troubling knowledge to work within. The pollution, the debris, the earth, the sea spray, my walking body, all are entangled and forge unpredictable and shifting relationships across different scales of time. The research gives equal treatment to each thing encountered to reflect this non-hierarchical relationship and mingling together (Harman, 2018; Latour, 2018). To bend down to collect the inorganic matter of plastics and tin cans is to disrupt

these relationships and form new assemblages, where my walking body becomes another element within an unpredictable intra-action with the matter of the Taw. For Bennett 'human agency is always an assemblage of animals, plants, metals, chemicals, word-sounds' (2010, p. 109).



Figure 30: Observation image: unlikely and unpredictable 'assemblages' of more-than-human and non-human matter along the Taw (2019). The mussels, which act to clean the polluted water, form a strange symbiotic relationship with the plastic debris, growing on it as they normally would on the organic matter of seaweed, anchoring the plastic twine down, preventing it from washing back out to sea in the next high tide.

Intra-actions as a form of assemblage with vibrant matter

Bennett's writing about assemblages forged through unpredictable combinations of matter that lead to a sense of 'vibrancy' (2010), has been another contextual element in creating an understanding of the nature of materials that I encountered, and the agency that emits from the unexpected assembled combinations that these 'things' possess (including my own body). This 'thing-power' (Bennett, 2010), is particular to the assembled things that come together; to the combinations that hold an inherent unpredictability or alchemical series of entangled outcomes that cannot be foreseen. I see the processes that I have developed with the matter along the estuary as holding a form of unpredictable thing-power. This outcome can be strange or uncanny, but can also hold a sense of wonder or enchantment even amidst the destructive matter of plastic and river pollution (Bennett, 2010). The trace of this record is what remains on mud, metal, paper or in sound over the different series of works that have emerged through the project. Below I examine in detail how this thinking relating to material entanglements, vibrant matter and tiny shifts evident through creative experiments is held as a trace within one of the works: *Ghost Plastics*.



Figure 31: Image of work in progress along the Taw: Handful of collected plastics from a walk along the Taw, March 2018, creating an unlikely assemblage of things holding their own vibrancy and strange, unlikely wonder in their colours, shapes, textures and traces despite their destructive presence on the estuary and within so many of our places.

Plastic debris as pockets of unlikely vibrancy and uncomfortable enchantment

Over the many walks spent bending down to unpick plastic debris from bundles of seaweed, or excavate it from silt and sand, a new knowledge formed of these plastics. I began to know intuitively where to find them, and could 'read' through them (thinking here about a diffractive methodology), when the last storm or very high tide had passed along the estuary. In the summer and after a long period of calm weather, the plastics were tiny sun-bleached fragments, ground down slowly through successive tides. After wet and windy weather, new larger plastics would wash in, the strength of each wave carrying bigger chunks of fishing twine, whole bottles, toothbrushes, toothpicks, pill bottles, dummies. The list could go on and on (Figure 31). Sometimes I would read them in a very literal sense – the French writing on plastic pill packets and bottles nestled in together along one small stretch, found on one walk. Some waves were so strong that fishing nets became wedged between the large boulders acting as sea defences to protect low-lying farmland behind. I would pull a strand only to find it buried so deeply within the sand that no amount of digging by hand could release it from the earth below.

I began to experiment with ways to record these plastics. In doing so, gradually I became aware of certain behaviours they held, the agency of this material in different intra-actions; fishing twine would bend and flip in a particular direction no matter how many times I placed it in a certain way, it held its own potential energy and memory of movement that I observed again and again using my eyes and my feeling hands. Fragments from fishing crates would become increasingly brittle and suddenly shatter with the lightest of touch. A smell emanated from the plastics that began as clearly identifiable as the sea, but gradually became something other, something less pungent but more menacing, something that smelled instinctively toxic as the plastics slowly began their 500-year trajectory towards decay.

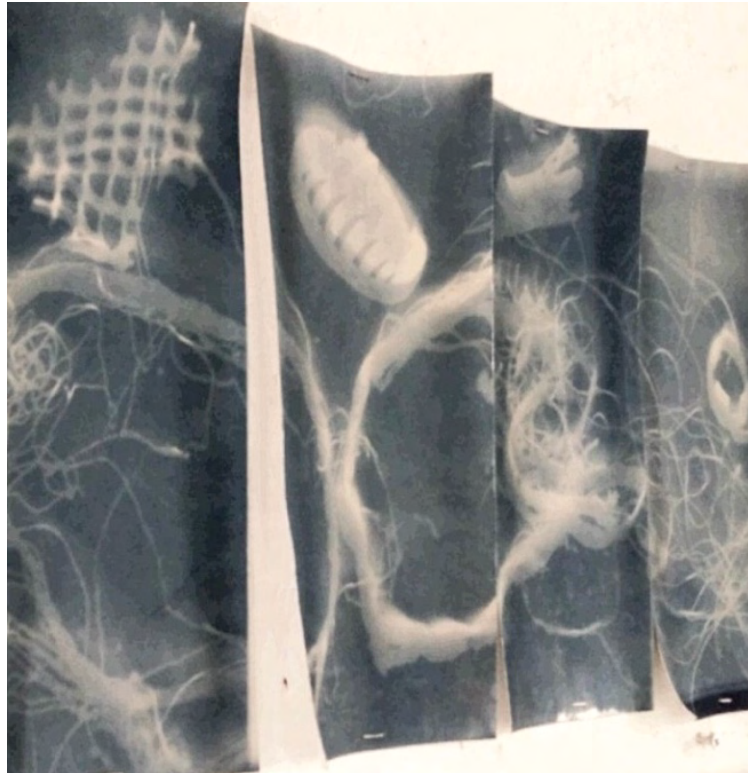


Figure 32: Image of work not included in PhD exhibition but referred to here as context: cyanotypes recording collected plastics along the Taw, 2017.

I tested ways to work with these collected plastics, both at the meeting points of the assemblage of plastics and seaweed along the Taw and then later within the studio. Initially these formed cyanotypes exposed on the estuary to hold the negative space of the shapes of each plastic, influenced by the early cyanotypes of Anna Atkins recording algae finds from the 1840's (Figure 32). I wanted to find a way of working that held a sense of the two-sided nature of an object, the top that I could see on the walks, and the bottom that was in contact with the estuary sand, that hinted at the fact that we as humans do not experience both sides simultaneously. Timothy Morton says of objects (which here I relate to Bennett's use of the term 'things', 2010), that to hold an object and pass it from one side to the other is to always keep the 'other side' hidden, it is always only partially apparent, it always eludes full knowledge and understanding (2013). He goes on to relate the ability for humans to see both sides of an object to eco-phenomenological discourse. This issue echoes on a 1-1 scale the difficulty humans have in seeing the world on a global scale, as Paul Ennis quoted by Morton sets out: 'Even in the age of the 'world' picture, the Earth cannot be photographed

completely. Any image of the Earth is a partial image taking in only one side of the globe. That is the Earth conceals one-half of itself...' (2013, p.132).

Moving back to thinking of the plastics and other matter less as objects and more as 'things' with a sense of 'thing-power' emitted through their unlikely combinations, I brought in this elusive, two-sided nature of each thing collected into my experience of working with the plastics and other finds from the walks. These finds often included tin cans and lids found along the walks (the walks themselves having the two sides of each footstep, the 'there and back' of each walking route, the then and now of my experience of the estuary as set out in Chapter One). Finding ways to simultaneously convey both sides of the things collected became a research aim. At the same time, I also wanted to find a way of working that formed a kind of assemblage or a meeting point of matter to attend to its strange vibrancy (Bennett, 2010). A mode of working too, that was in a small way abrasive or destructive to hint at the nature of the presence of the plastics in our landscapes.



Figure 33: Image of work included in the PhD exhibition: *Ghost Plastics (part one, Taw Estuary, Nov 2019)*, (65 x 45cm), Photo Etching on Somerset, French Black and Bideford Black.

Moving away from the cyanotypes, I began to place each bag of collected plastic onto a light sensitive photo-etching plate so that the points of contact between each object and the surface of the plate, were recorded by creating rough textures etched into the plate that would hold ink (Figure 33). These plastics were not arranged – the plastics flexed and fell in their own patterns and spaces as they came out of the storage bag and onto the plate. The contact point of each piece of plastic burned a textured indent into the smooth surface of the plate. These indents hold pockets of ink once inked up, which formed a visual register of the contact points of the plastics gathered with the surface below, much as they do on the sands and mud flats of the estuary. The ink I used to print with, held within it ground down earth made into pigment using small handfuls of Bideford Black earth collected along the walking route. This carbon dense earth seam neighbouring the coal seam that was also mined here, the fossil fuel burning that holds a direct link to our heating earth in the now. What emerged working in this way was a record of the plastics made through a process of abrasion and made with the earth of this place, a way of working that tuned into the abrasion of wind, sand and waves on the plastic matter, grinding it down over time, a way of working that left an indelible etched-in mark on the surface of each plate, as our human presence is leaving an ongoing mark on the surface of the earth that I align to Ingold's term a 'shadow-trace' (2020, see Chapter One).

While this method of recording the plastics formed an earthy register (through the textured areas of the plate) of each point of contact between plastic and surface beneath, this way of working didn't record both 'sides' of the plastics, top and bottom. This felt important, on the walks I encountered the top side, but the estuary was in direct contact with the bottom side – the two sides of the plastics bridging our entangled human relationship to place through their presence. With this in mind, I started to form a different process working with the fishing twine. I was fascinated by the curls and bends that it formed, that no amount of human touch could straighten. I would lie them out flat and yet they would flip over and form their own curves and unpredictable shapes. This attended again to Bennett's sense of material agency evident through the behaviour of the plastic, an uncanny memory held within the movement of this material (2010). The plastics made the shapes the plastics wanted to make, I would place them on paper, but the shapes that were formed were not

of my own making. I was not in control of this; another force, another form of agency or activity held within and between the materials took over.

Working with this, noticing this, recognising this agency and finding ways to explore it further I began a series of tests. First using carbon transfer (see Figure 34) and then earth mixed with polluted river water (Figure 35 and 36), to create a sandwich of paper, carbon and plastics. These were then either hammered onto by me, jumped on, or passed through a press to form an indent of the top and bottom of the plastic twine simultaneously sandwiched between two sheets of paper. The carbon or earth traces are left to transfer onto paper through human pressure. What emerged was a record of the bends and curls each piece of plastic formed through its own material vibrancy – a record of not only the plastics, but of the plastics as a vibrant matter within the paper/plastic/earth/river water/human pressure ‘assemblage’ at that given moment in time.

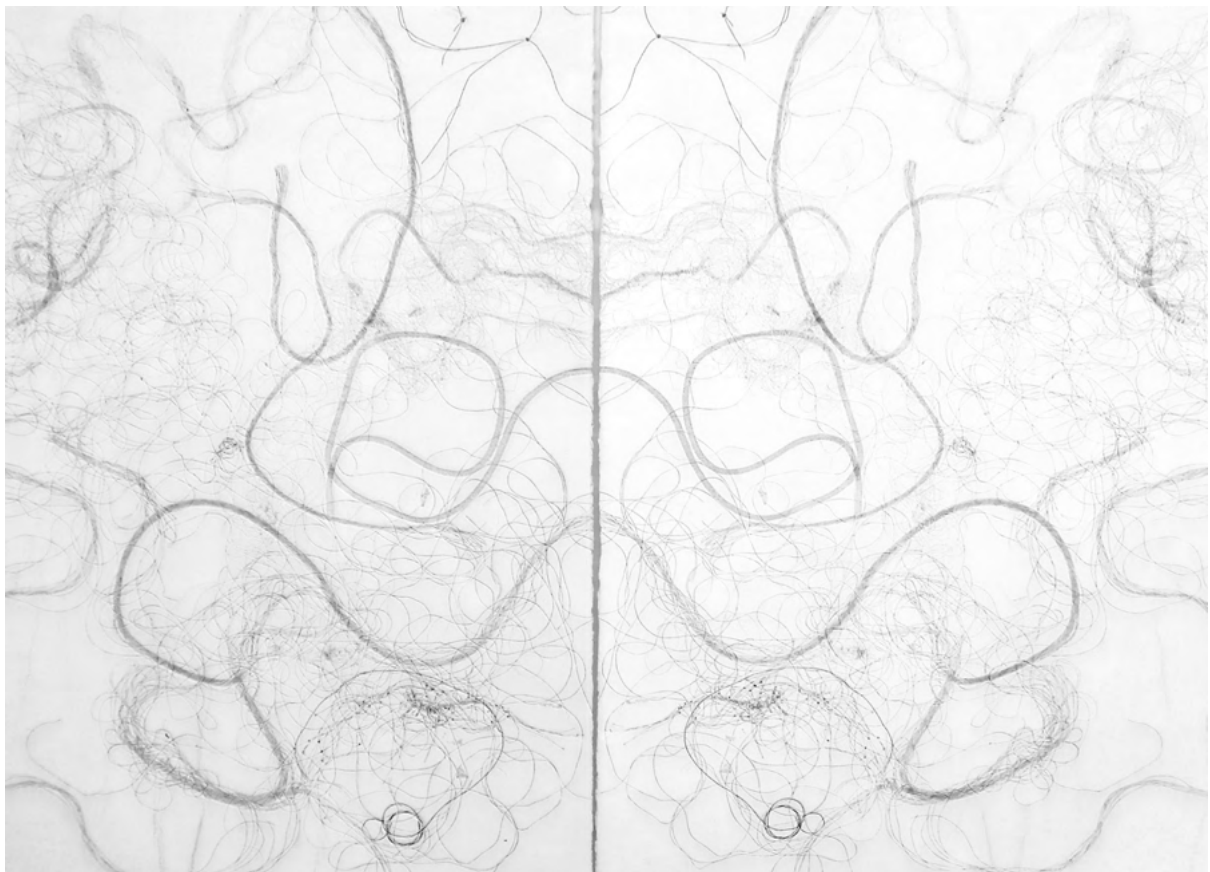


Figure 34: Image of work included in the PhD exhibition: *Ghost Plastics (Part three, Taw Estuary, May 2020)*, 75 x 45cm x 2, Carbon transfer on Somerset.

Again, in these processes there was a sense of destruction in the action of hammering the plastics or crushing them, a way of working that recognised and worked with my growing frustrations and sense of injustice that our landscapes are littered with plastics, pollution and other human debris, that this place of my childhood memories is now being slowly buried under a daily influx of rubbish, the river now too polluted to dip your toes into 'safely'³⁸. Yet despite the crushing of the twine, the emergent trace on paper holds a delicate quality to it that was unexpected.

The work that stems from this process holds a deliberate duality to it – the top side and bottom side of the tangled plastics. There is an almost mirror image with a small gap between. The record held the top of the plastics on one sheet of paper and the bottom of the plastics on the other sheet of paper. I left a gap between the two sides when hung to give a sense of a fissure or crack between the works and our understanding. A gap that gave a sense that all cannot be known, there is visible repetition with the two sides in close relationship to each other, but the two sides are never exactly the same, some of the knowing is always elusive and exists not on the surface but falls through the gap. The record on paper is not two-dimensional, it is embossed with the woven patterns of fragments of fishing twine pressed into it, it holds a sense of the uncanny about it – unsettling the familiar plastic bundles into something other, something that the human eye seems duty bound to unpick into familiar images of faces, bodies, animals.

³⁸ I align this emerging understanding to a sense of Albrecht's 'Solastalgia' (2005) – a sense of loss for a place that is not what it once was due to environmental degradation.

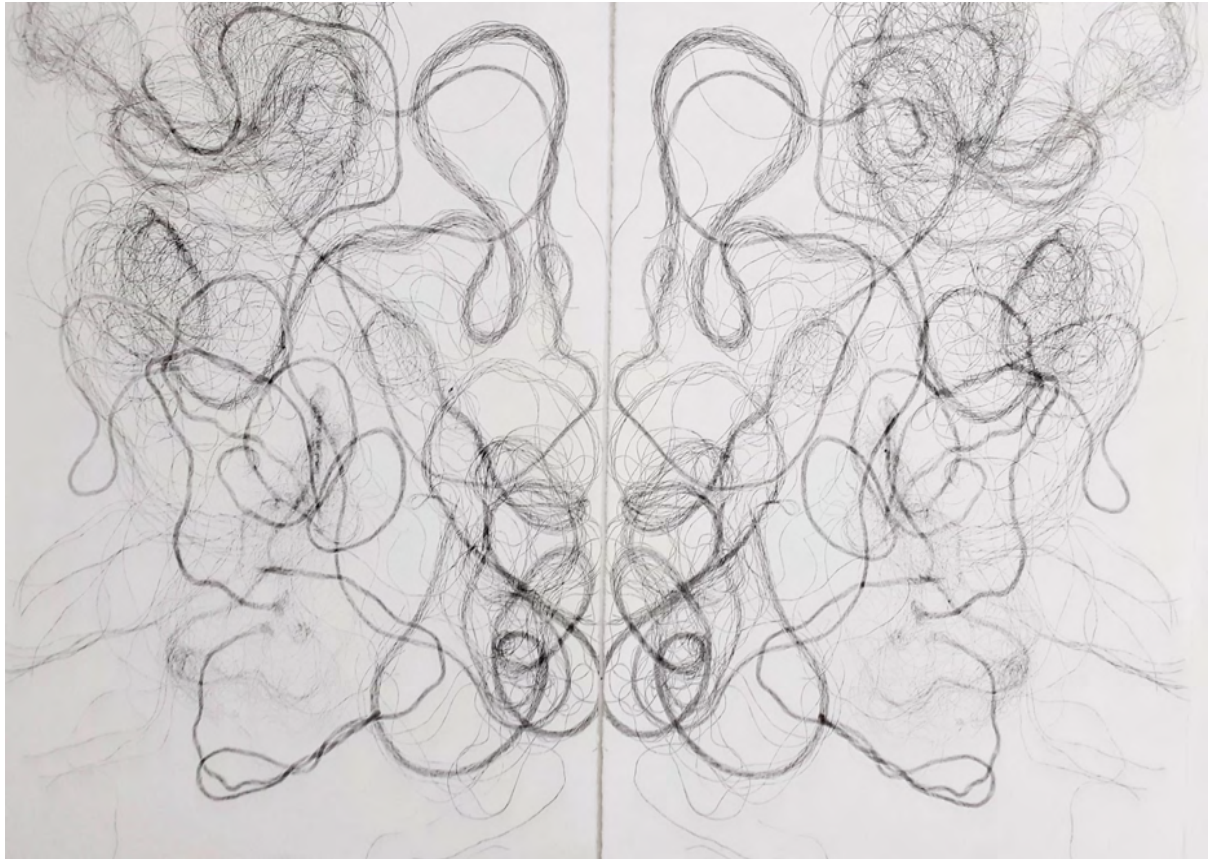


Figure 35: Image of work from the same series as work included in the PhD exhibition: *Ghost Plastics (part five, Taw Estuary, May 2020)*, 75 x 45cm x 2, Bideford Black and River water on Somerset.

The images created are unpredictable and vibrant (Bennett, 2010). They are made by the plastics, holding a direct register of their touch at a specific moment in time and yet seem to convey other unpredictable possible readings. When I have tried to work with the same plastic bundle through the same process, different patterns emerge at the point of contact with the weight of the press and a different moment in time, a predictable outcome remains elusive, the material memory and vibrancy of the plastics has affect in the process, the trace of this agency is evident in traces forming the artwork (Figure 35 and 36). A strange knowledge is held within these works as a record of the crushing action of plastics between paper. A knowledge of how the plastics behave, the patterns made through the formation of the matter from its long journey from oil extraction to plastic, to human use, to human discard, to temporary resting place along the high tide line of the Taw. A knowledge of the unexpected vibrancy of these toxic materials as they meet earth, river water, paper and human pressure.

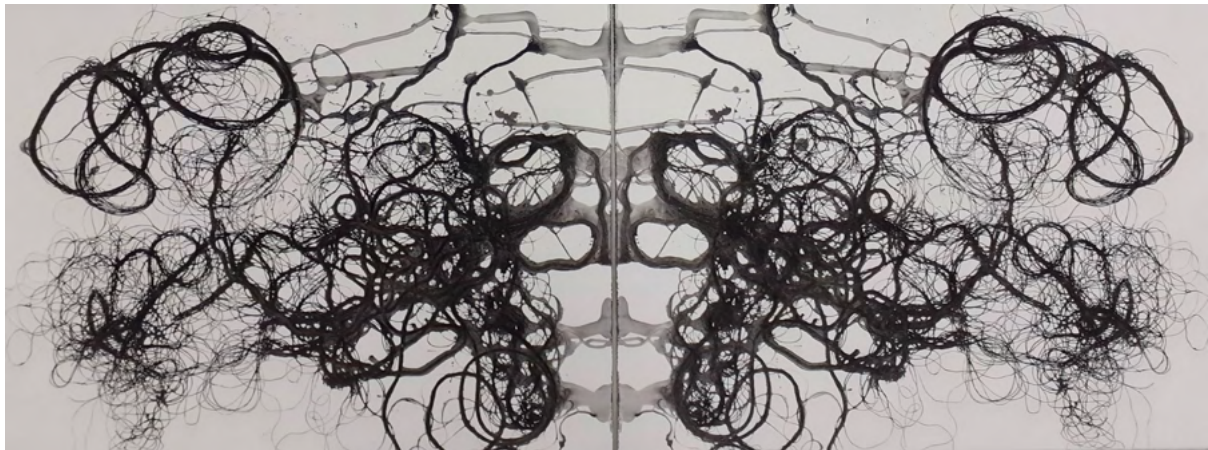


Figure 36: Image of work included in the PhD exhibition: *Ghost Plastics (part four, Taw Estuary, July 2020)*, 75 x 45cm x 2, Bideford Black and River water on Somerset.

Chapter two conclusion:

In conclusion, I return to the questions raised in the introduction that have been addressed within this chapter:

- What significant events marked the shift between the initial research question aiming to ‘capture’ a place towards ‘collaborating’ with it?

This chapter has investigated the significant shift in approach that emerged in the early stages of the research, directly after the birth of my second child, at a time when the paintings stemming from walks on Salisbury Plain were exhibited. This break in walking / making through pregnancy, and the exhibition, allowed a space to understand that a disconnect had opened up between the materials of place and the ways of working. The chapter looked at the shifts in research question from a sense of ‘capturing’ a place through a series of paintings, towards a collaborative approach to working *with* a place, through walking in the Taw.

- What relationship does this research have with the work of other artists and how did this evolve?

Artists working directly with processes that ‘record’ material entanglements and work with collected matter (human and non-human) were explored in relation to the artistic research within this project, with the understanding that the research emerged through direct engagement with the estuary, its matter, rather than in close reference to a grouping of artists.

- What does it mean to be entangled with matter and how does this relate to an artistic approach to place inquiry?

This shift of approach was investigated through Barad’s thinking in particular, in relation to ideas of entanglement and matter through an agential realist approach (2007). This framework, which was not actively a part of how the artistic processes developed from the start of the project, has instead allowed many insights into the project through the later stages, by *reading through* Barad’s philosophy-physics that Barad in turn uses to *read through* feminist theories and their relationship to performativity, objectivity and phenomenology. The chapter highlighted how this thinking has enabled a contextual focus to examine the knowledge that is held within the research and *how* it formed through the relationship of the research, my own body as a researcher, and the notions of objectivity and the personal. The research has taken an entangled approach that places Bennett’s ‘vibrancy of matter’ entangled with human encounters as central to how we as humans experience place, and central to the complex, shifting and ambiguous nature of place in all of its multiplicity.

- How do the processes enable a record of the entangled intra-actions with matter within the Taw?

The processes that I have explored through Barad’s agential realist framework are understood to be ‘measurement apparatus’, an experimental artistic form of apparatus as an extension of Barad’s thinking. These experimental artistic ‘measurement apparatus’ hold

within them a trace of the entangled intra-actions of matter within the estuary; intra-actions that include the matter of my own walking body as the researcher. The researcher was understood to be *part of the research* and not a distant observer on the outside of the project. The chapter looked at this idea through a detailed understanding of a particular process developed collaboratively with the Taw; *Ghost Plastics*, with the small differences and knowing that emerged through repeating these processes over a period of six years. Bennett's thinking relating to 'thing-power' and the agency of matter through particular assemblages was investigated in relation to the development of *Ghost Plastics*.

The next chapter will look in detail at the repetitive nature of both the walks as a methodology and each process repeated as an approach to attend to minute shifts in the traces of entangled intra-actions with the matter of the Taw.

Chapter Three: Memory, difference, repetition, control and trace

Chapter summary:

Chapter three examines the role of repetition, situated within the repeated nature of the circular walks along the Taw and the embodied action of stepping one foot in front of the other in a forward motion. It also attends to the repetition of undertaking the different processes during each walk, and the repetitive marks made on and within the surface of the apparatus of the measuring devices, that on close inspection holds evident tiny shifts in repetitive marks. This is investigated in relation to Deleuze's *Difference and Repetition* (1994) and further in relation to Barad's diffraction methodologies, through an agential realist approach that takes account of the minute differences emergent from material intra-actions (2007). This chapter also highlights the role of memory within place inquiry. These themes are attended to through a close investigation of one of the processes, *Rust Recordings* and the knowledge situated within it.



Figure 37: Observation Image: Taw Estuary, view towards the demolished coal-fired power station, November 2020. Part of the estuary is a Site of Special Scientific Interest within the North Devon Biosphere. This area however holds traces of an industrial past and present, and is planned for large scale development with ongoing local opposition to the plans visible in posters and petitions displayed in homes and on footpaths along the estuary over the course of the research.

Extract from field notes November 1st 2020

There is definitely an A-side and a B-side to the estuary that rub along together not so much in harmony. The one, a seemingly pristine biosphere, the other an industrial wasteland where things come to rest not altogether peacefully. Which one you get depends on tides, winds, moods and paths taken. Today was very much a B-side sort of a day to echo the collective heavy feeling. The day after the night before – another lockdown looms. Field trip cut in two.

It has made me realise, we're all just awkwardly muddling along together. In some spaces the meeting points are smooth or gently interwoven. In others they are rough and sharp, scratching the one into the other with every gust of Atlantic wind that blows. In many ways the labels 'Biosphere' and 'Site of Special Scientific Interest' are unhelpful, suggesting as they do protection from human reach, a sign reads 'wildlife refuge' – a refuge from who and from what? Across the bike track a new housing development emerges from the muddy mire – a sea level nest of luxury executive homes. Passers-by have defaced the marketing banner that sits at the intersection of the bike path, the coast path and the wildlife refuge. Shithole homes in wanker way the sign reads now. Birds nest beneath the ominous hum of electric, making its path of resistance through the pylons that walk their giant steps away from the water and towards the moor.

I return back to the cabin in the gloaming of a November dusk in the tail end of another storm. Soggy trainers and pockets full of sand, plastics and rust. This is not a place for the knowing, just for being with it of a while. It reminds me of visits to Grandma's old people's home. I sit with her and make shouted conversations that wade through confused memories and scales of time. When I leave, the residue of these fragments remains, unsettling my senses with memories of half-truths and forgotten times.

Memory and repetition in sensing place

A sense of repetition emerged through the research, building a muscle memory of the Taw. This memory held different textures at each stage of the walk, as well as a knowledge of the smells and sensations that became an embodied knowledge over the six years of walks. The research also took a repetitive approach to the processes developed in collaboration with the Taw, in that during each walk, the experimental processes were undertaken and repeated on every walk. The intention with this approach was to form a series of records that attended to the small shifts in marks-made on and in the surface of the recording 'apparatus', as a trace of the material intra-actions along the Taw. These small shifts in marks-made would hint at the ambiguous, shifting and multiple nature of each place

(through the lens of the Taw). The records would also offer a sense of the passage of time through the minute shifts in traces evident through the processes over the course of the research. The repetitive approach made visible the differences in material intra-actions in their minutiae that 'produce different materializations of the world, and hence there are specific stakes in how responsiveness is enacted. In an important sense, it matters to the world how the world comes to matter.' (Barad, 2007, p. 380). There is again here a close alignment in Barad and Haraway's thinking that has enabled a 'diffractive reading through' of this research (2007, 1997). In this way I hold the repetitious approach to the walks and the processes undertaken repeatedly as a mode of 'responsiveness' that shows the 'different materializations' of the world through the tiny shifts in traces held within the work (ibid).

Human debris as a scar on the landscape

In the writing that follows, I explore the nature of repetition in relation to Deleuze's *Difference and Repetition* (1994 translation), slowly settling upon what he calls 'open repetition' and notions of 'symmetry and dissymmetry' as a lens through which to further examine the artistic place inquiry, the passage of time, my walks in the Taw and the work emerging through these entangled things. The marks made into the aluminium plates under hand in *Scratching the Surface* and under foot in *Ground Texture Recordings*³⁹, are what Ingold calls 'reductive traces' within a landscape (2005, p.5), inscribed by the textures of rocks, shells, sand and barnacles into the surface of the aluminium. These inscribed plates became drypoint plates that were filled with ink made from earth to make generative or for Ingold 'additive traces' on paper (2005, p.5, 2016, p.44). These indents and scratch marks are abrasive in their making and damage the smooth surface of the plate. I came to think of this abrasive, scratchy quality to the making as symptomatic of our human relationships with our places, as laid bare through the Anthropocene. I have come to think too of the debris washed up and discarded in this and other places as a scar on the landscape and Deleuze's writing resonates here when he says 'a scar is the sign not of a past wound but of

³⁹ See Appendix One for further details about this process.

“the present fact of having been wounded”: we can say that it is the contemplation of the wound, that it contracts all the instants which separate us from it into a living present.’ (1994, p.102). Untangling the plastic debris from along the banks of the Taw has been an action that has ruminated on human debris acting as a kind of wound in our places, on its slow abrasive journey from ‘present fact’ (ibid) into the long future of its 500-year intergenerational decomposition.

Repetition of walking as close contemplation to tiny shifts in a place

Deleuze states ‘All our rhythms, our reserves, our reaction times, the thousand intertwinings, the presents and fatigues of which we are composed, are defined on the basis of our contemplations.’ (1994, p.102). The methodology of walking has been central in opening up a time, space and rhythm for contemplation, a contemplation that has been sensorial and has extended to a ‘making with’ the Taw so that it is a reciprocal, entangled and ‘sympoietic’ contemplation *with* matter (Haraway, 2016). The emergent work is the evidence of these repeated contemplations through the senses. Like all contemplations they are incomplete and fragmentary by nature, with repetitious aspects, and small shifts in different directions that circle back anew. Deleuze writes, ‘Imaginary repetition is not false repetition which stands in for the absent true repetition: true repetition takes place in the imagination.’ (ibid, p. 100). When I collect plastic fishing twine, removing it from the wet sand to expose a pattern, my imagination sees patterns made by the retreating water as the tide ebbs away into the estuary. In the flaking rust on the ships and plates left behind to record the weathering process, my imagination sees the repetition of shapes of lichen on the rocks that line the estuary. When I see the marks scratched into metal from the ship’s hull I see the lines made by the dune grasses silhouetted against the sky (Figure 38). Another human might see other significance in the marks collected within the work, the repetition of imagining forms, connections and further entanglements across space and time – a view that reminds us of another place, a smell that transports us to another time in a Proustian moment.



Figure 38: Image of work included in the PhD exhibition: *Scratching the Surface (Abandoned Ship Register, June 2019)*, Drypoint printed with rust pigment on Somerset, (detail) from 110 x 35cm.

Witnessing the Taw and being witnessed by the Taw

These small imaginings, these perceptual shifts in human terms are what makes us *us*, or in the context of this research what makes me *me*. They are part of the personal that is entangled within the project, part of what enables my body to sense this place and other places. As Deleuze states in relation to identity ‘we speak of our “self” only in virtue of these thousands of little witnesses which contemplate within us.’ (1994, p.100). He goes onto describe this contemplation as ‘always hidden’ in the moment, so that the work that emerges from the Taw is a record to reflect upon what it is to exist in the place, what it is to sense/feel it, how these sensorial contemplations mingle together over time, mingling with other intra-actions with the estuary’s matter and with the processes making visible the ‘hidden’ contemplations. The ‘thousands of little witnesses’ (ibid) are positioned in relation to the research as internal imaginings, but importantly also as the matter amidst which I have been entangled, working with and thinking through. The matter witnesses me and I witness it (through all of my senses). The witnesses are human, more-than-human and non-

human equally. They are reciprocal matter-witnesses, but they are also memory-witnesses that my walking body held within, often in the shape of memories relating to my grandmother and the trace of her presence along the Taw that has manifested in so many of the material encounters over the six years of the research. The imaginings of her stories that were increasingly shrouded in the fog of dementia as the project progressed, often framed the start or end of my walks along the Taw, through visits to her home and our tangled conversations about this place. These nestled within the other material encounters along the estuary.

The witnesses in this way are multiple and fragmented, human and non-human. They are marks made within the work, the residue of matter, the trace of questions asked, the sounds recorded. They witness my own walking body through the recording apparatus (an extended non-visual witnessing that is a witness through the touch and abrasion of metal plates on hands and feet for example). They witness too, the other matter intra-acting with(in) the processes. These are non-linear, layered and rhizomatic witnesses in the broadest and non-anthropocentric sense, in so much as human witnesses / memories are treated equally to non-human material witnesses that went into the collaborative making of the works. The witnesses hold a close connection with Haraway's thinking building on Stengers and Despret's *Women who Make a Fuss*.⁴⁰ (2014). As Haraway says 'The fuss is not a heroic statement of a grand cause...It is past time to make such a fuss.' (2016, p.130-1). This mode of witnessing is for Haraway 'modest' (1997). It is situated within the everyday, the mundane, the small actions of collecting plastic debris, of placing one foot in front of another slowly as an act of noticing and caring.

⁴⁰ Stengers and Despret's *Women Who Make A Fuss, The Unfaithful Daughters of Virginia Wolfe*, attends to women thinkers who have been overlooked. Haraway builds upon this through the idea of the 'witness' as someone who stands up for a cause as a quiet mode of resistance.



Figure 39: Image of work included in the PhD exhibition: *Rust Recordings (Abandoned Ships)*, rust and other marks formed on the metal plates left to act as non-human 'witnesses' on the smaller abandoned ship along the Taw, February 2018.

Scale/time as human and non-human

Here it is important to make a distinction between the experience of repetition, time, place and scale, as not only mediated by human bodies, but also mediated by non-human bodies. There are different scales of time and place registered through experience. My register is and will always be human, but through tuning into this place I have become more aware of the other things experiencing time and repetition in different ways (see Figure 39 holding residues of rust, cobwebs, insects and seeds through this process). Deleuze highlights different scales of time when he says that what is experienced is 'a present of a certain duration which varies according to the species, the individuals, the organisms and the parts of organisms under consideration' (1994, p. 101). The barnacles alive and dead, crumbling off the rusting ships, experience time in a way that is different to my experience of time. My walking children experience the time and place of the walk in a way that is different again. The long afterlife of the plastics beginning their 500-year journey into the earth experience time on a scale that stretches beyond any single human lifetime, beyond my children's

lifetime, into a future that we are unable to grasp in the imaginings of the present. This is important – because the legacy of things like the plastics discarded in the scale of the every-day is difficult to grasp because it stretches beyond the boundaries of human time into a future geological epoch. And yet despite the knowledge of this, most of us, myself included, still go about the daily business of unwrapping something encased in plastic, placing it in the bin and placing it *away* from us. As Timothy Morton and Bruno Latour highlight, the uncomfortable truth that is unravelling in the present, is that there is no *away* - to flush a cotton bud down the toilet is ultimately to allow it to wash into the sea and into the creatures that inhabit the sea and then back into our bodies (2013, 2018). Or as Astrid Neimanis explores, as watery bodies, the water we drink passes through us into our waterways taking with it ‘our antidepressants, our chemical estrogens’ [sic] and more besides within our ‘disposable culture’ and ‘ecological disconnect’ (2012, p.87).

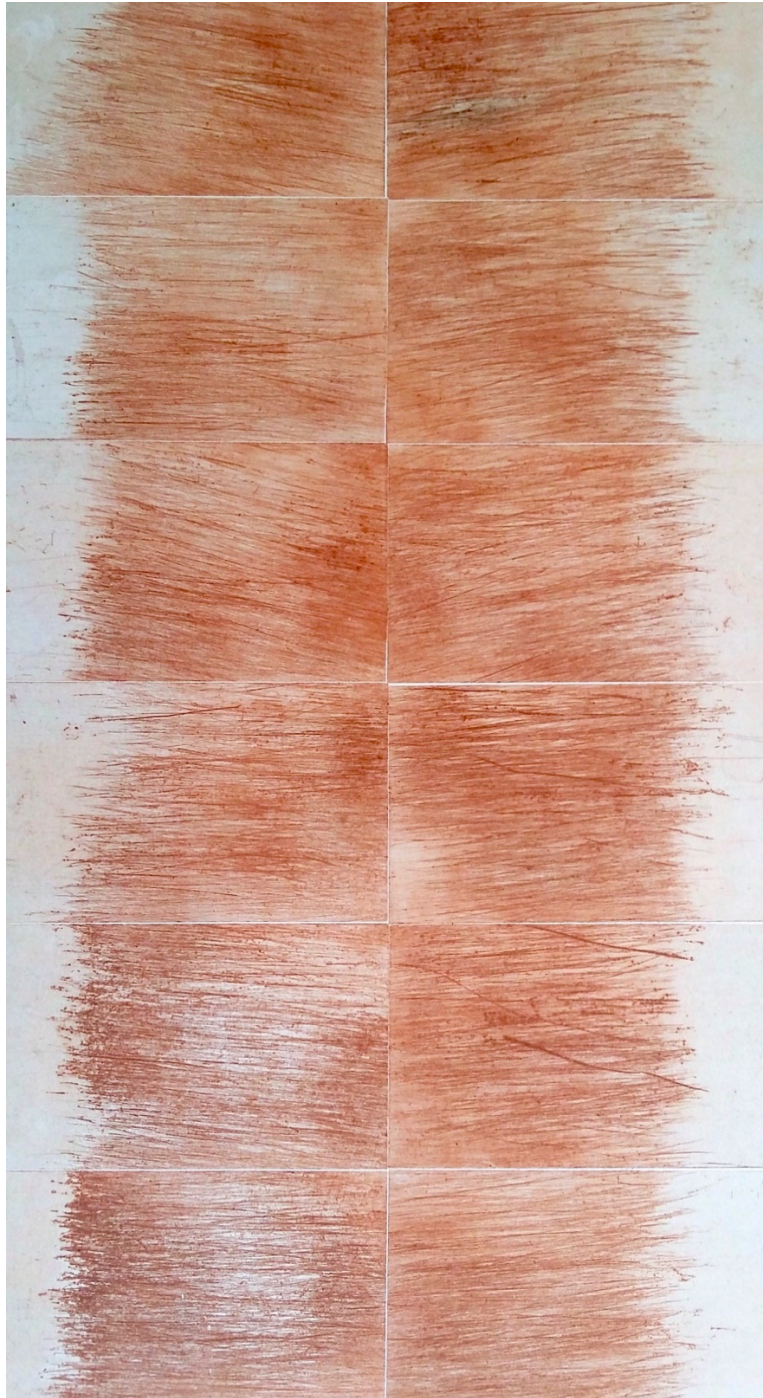


Figure 40: Image of work included in the PhD exhibition: *Scratching the Surface (abandoned ship recordings)* October 2019. The hull textures are recorded with metal plates attached to hands, pushed along the surface.

These become a form of experimental drypoint etching plate that is inked with handmade ink from rust pigment. The trace of the textures and action is held within these works on paper photographed above. They hold a relationship to AB repetition, with the left side here being the left of the small ship's hull, and the right side being the right hand side of the small ship's hull.

‘Open Repetition’

As the work emerged, it became evident that a sense of repetition was held within the mark-making. There was a repetition too in my walking body undertaking the processes repeatedly. The walks repeat in terms of footstep following footstep and similar paths taken over time. I frame this embodied repetition of footstep after footstep forming each walk through what Deleuze calls ‘open repetition of the AB, AB, AB’ variety as of particular relevance in terms of how the project has evolved. Deleuze states that ‘AB repetition’ is a form of repetition ‘between two elements which are both determined and joined together by natural opposition.’ (1994, p.95/6). He likens this to ‘tick-tock’ repetition, which I would apply to this research as left step / right step; left hull felt through right hand / right hull felt through left hand, the two sides of the plastics held through the top and bottom emboss (see Figure 40). The relationship between object (or thing) and subject is key, as Deleuze states, ‘In considering repetition in the object, we remain within the conditions which make possible an idea of repetition. But in considering the change in the subject, we are already beyond these conditions, confronting the general form of difference.’ He goes on to say that ‘The ideal constitution of repetition thus implies a kind of retroactive movement between these two limits. It is woven between the two.’ (ibid, p.94/5). This kind of woven repetition jumps off from the last point so that it spirals forwards in a non-linear action, just as no two records feeling the textures of the ship’s hull are the same, they are nonetheless woven together in some way. Just as the subsequent walk along the hull begins at the point of the last walk, it is a repetition, but a repetition that holds within it the experience of the previous iteration. The B stems from the A, the A then relates back into the B, and then the next A, and so on (see Figures 40 and 41 for the traces of difference held within the work).



Figure 41: Image of work included in the PhD exhibition: *Scratching the Surface (abandoned ships)*, 2019, rust on Somerset, 110cm x 20cm x 5. Installation of a series of textural registers of the changing textures of the abandoned ships along the estuary. These stem from the process of pushing aluminium plates along the length of each ship's hull. This has been repeated throughout the research to measure the small textural/material shifts in the two larger abandoned ships on the Taw as they react to the passage of time, weather and other material processes.

The repetition held within the work links also to a sense of repetition as a measurement, with measurement here, in relation to Barad's writing (2007), relating to the apparatuses of the measuring, entangled within the outcome of the thing(s) or phenomena being measured (see previous chapter). Thinking about where the 'original' is situated within the

processes and how ideas around the 'original' manifest themselves within the work, offers an important insight. If, arguably, the 'original' is the entangled meeting point of matter along the Taw within which the processes form an active part. Then, there is a second stage to the processes that transfers material residues of the entanglement onto paper. This second stage forms another kind of repetition / entanglement. In open repetition terms, the A and the B link closely together but are not the same. Theoretically these A B repetitions could continue ad infinitum. Taking as an example *Rust Recordings*, the rust and marks made into the steel plates left on the abandoned ships for durations are then pressed onto wet paper to form *Trace (abandoned ships)*⁴¹. A residue of the rust and specific marks from each rusted plate transfer onto the wet paper to form another series of work. Similarly looking at *Ground Texture Recordings*, (Figure 42), the marks and indents made into the surface of the aluminium plates through the intra-action of my walking body and the textures of the ground are then transferred in another repetition onto paper with a handmade ink made from collected earth mixed with printing oil.

I understand the *Rust Recordings* in relation to open repetition as the 'A', with the transfer onto paper as the 'B'. Similarly *Ground Texture Recordings* are a form of 'A' repetition (see Figure 42), that moves into the B repetition of the transfer onto paper with earth. That is to say each work together, one informs the other, each holds a repetition of marks made and marks transferred, they enter into matter-conversations closely woven together. Barad explores ideas around the 'original' in relation to quantum theory, and again I see an artistic interpretation of this in relation to this research. Barad states that 'any attempt to measure the "original" apparatus's characteristics will require its involvement within larger phenomenon whereby it is seen as the object of investigation, thereby excluding its role as an agency of observation.' (2007, p. 161). As I think about the processes as a series of creative experiments to examine / measure the place of the Taw, I see an extended application of this thinking in relation to how the processes work with the original, which are then re-staged as another repetition to work with some of the apparatus, forming another trace of the marks made on a different series of work as the outcome. Barad goes on to highlight that each measurement of the apparatus would in turn involve another set

⁴¹ See Appendix One for further detail and images.

of apparatus, and on this process would go. Ideas relating to the 'original', the repetition and the trace are held within the work. There are threads of this thinking woven with Bennett's exploration of causality in relation to matter, its agency and its relationship to process: 'emergent causality places the focus on the process as itself an actant, as itself in possession of degrees of agentic capacity.' (2010, p. 33). The entangled nature of the different processes doing the measuring with the traces transferred onto paper, is integral to the way the work has evolved. The processes are not inert, they are repetitive 'actants' attending to the tiny shifts in matter along the Taw. The 'emergent' nature of the work has been an ongoing consideration in the sharing of the work, (see Chapter Five).



Figure 42: Image of work included in the PhD exhibition: *Ground Texture Recordings*, 2020, aluminium, dimensions variable. Installation of the aluminium plates that were attached to the base of my walking boots. They have been printed from using ink made from Bideford Black and hold a residue of this earth / process.

The walks too are woven together in the route they take over time. The route I walk is broadly the same, although influenced by tide times. As such, each walk is a repetition of the last, yet each walk sets off holding within it the experience of the last walk and all that

has happened in the intervening time. I am not the same person I was on each walk. At each point the A experiences have become woven into the B experiences, so that the B walk holds forth all of the A experiences. In this way the processes, and the residues on paper hold a sense of an A side and a B side to them; not to infer A as somehow better, but to infer a relationship so woven that the one could not exist without the other. The A and B have a close relationship that does not have a hard separating boundary. In Barad's terms, the one is entangled with the other at the intersections between space, time and matter – at a point of 'spacetimemattering' (2017, as explored in Chapter Two).

Returning once more to Deleuze in relation to the different series stemming from a singular process, he writes that 'a singularity is the point of departure for a series which extends over all the ordinary points of the system, as far as the region of another singularity which itself gives rise to another series which may either converge with or diverge from the first. Ideas have the power to affirm divergence; they establish a kind of resonance between divergent series.' (1994, p. 365). In this way I see the processes as a set of series that are woven together and have over time and tide given 'rise to another series' (ibid) that holds convergent and divergent points in how it has developed and in the trace of marks that emerge. The series relate to each other – they refer the one to the other and back to the material sources of their making. This is a woven way of making that has emerged with and through repeated walks tangled with(in) the estuary. The work holds within it many tension points, in that it is often fragile and crumbling, but made through processes that are abrasive, that score and scratch the surface. These meeting points between tensions offer an exchange of vibrant matter that Bennett aligns to a position of naiveté. She highlights that repetition needs invention where actions 'disrupt the relation of movement', where the process is not 'without tension'. Instead 'each mode vies with and against the (changing) affections of (a changing set of) other modes, all the while being subject to the element of chance or contingency intrinsic to any encounter.' (2010, p. 22). For Barad there is a residue that is left behind, and another carried forward, a mingling of matter that is not easy to predict, nor explore as an outcome (2007). A mingling that is open ended and continues to shift and flux as it mingles with other matter over time.



Figure 43: Image of work in progress along the Taw: metal plates attached to the smaller of two abandoned ships along the Taw (2018) forming *Rust Recordings (Abandoned Ships)*.

A close examination of *Rust Recordings* in relation to the contextual thinking

Looking at one particular process through the lens of a repetitive intra-action to explore tiny differences recorded within the surface - the metal plates on the abandoned ships rust at speeds and forge patterns that cannot be predicted. These experiments are called *Rust Recordings* and aimed to hold a trace of the matter that echoes the decay of the abandoned ships on the Taw. This process stemmed from, in Bennett's vital materialist terms, a 'fascination' with feeling the flaking textures of the ship's hulls (2010, p. 17), and also from finding on one of the early walks in 2017 three large rusted metal sheets washed up on the shingle rock formation called *The Black Ground*. The sheets held marks made from weathering into the surface of the metal, holding a register of these intra-actions. They formed the inspiration point to bring my own metal plates to attach to the abandoned ships to act as 'witnesses' to the elements when I could not be there. Here again, this ties to Haraway's 'modest witness' as a figure of respons-ability (1997), a (non-human) witness to the possibility of 'other ways of doing things' (2016, p. 131).

The different matter that tangled together includes but is not limited to: the tides, the time of year, the wind, sun, rain and other weather patterns, duration, the list of the ship on the moving sand banks below, other humans climbing on board, birds nesting, spiders forming dense webs, other insects, human debris in the form of plastic bags, bottles, cans and various other things that blow into the inner space of the ship and then float around, other unknown factors displaying a thing-power. The possibilities could and do go on, and bring to mind Bennett's 'agency of assemblages' and their 'creative activity' (2010, p. 35), forming 'An assemblage [that] owes its agentic capacity to the vitality of the materialities that constitute it.' (2010, p. 34).

What becomes apparent through leaving mild steel plates attached to the deck of the smaller abandoned ship, is the entangled nature of all of the different things intra-acting within this place, the complex affects of these mingling things on the outcome of a simple process, or in Bennett's terms the 'emergent causality' (2010, p.35). Of the hundred or more metal plates that I have left for various durations as part of the *Rust Recordings* series, no two are the same (see Figure 43), nor are the front and back sides of each plate that I've come to think of as the 'a' side and the 'b' side relating to the dual nature of the estuary (high tide / low tide; biosphere / post-industrial landscape) and to Deleuze's thinking outlined above. Each one holds its own unique patterns and patina of rust that I have become able to 'read' to an extent, so that through the materiality of the rust I can unpick the different things that have formed it (see Figure 43, 44). As Bennett highlights, 'The task becomes to identify the contours of the swarm and the kind of relations that obtain between its bits. The 'swarm' includes 'human intentions as always in competition and confederation with many other strivings.' (2010, p. 32). The marks made within the plates are a trace of my human intention, the lives of creatures inhabiting the abandoned ships, the weather systems passing through 'swarming' or tangling together within the place of the Taw.

Knowledge emerging through processes (explored through *Rust Recordings*)

A certain kind of knowledge has emerged that would not have been known without attaching mild steel offcuts to the abandoned ship to co-exist with the matter (in all its vibrancy) of the estuary. This is of critical importance and applies across the artwork forming throughout the research: the knowledge emerges *through the experience of making*, of being with, feeling, smelling, observing the thing(s) being made collaboratively with the estuary over the passage of time. It develops at the messy overlapping meeting points intra-acting with body / place / thing / vibrant matter / time. For Bennett, 'an actant never really acts alone. Its efficacy or agency always depends on the collaboration, cooperation, or interactive interference of many bodies and forces.' (2010, p.21). It forms too through repetitive actions that open up an attunement to tiny differences, that moves my human sensing body away from acting alone towards being a part of a human / non-human 'vital materiality' (ibid). I can point to the knowing in this text, but the knowing itself is situated within the work as a record of the generative occurrences and within the processes at the swarming meeting point of things in all their vibrancy. As Bennett emphasises 'There was never a time when human agency was anything other than an interfolding network of humanity and nonhumanity; today this mingling has become harder to ignore. (2010, p. 31).

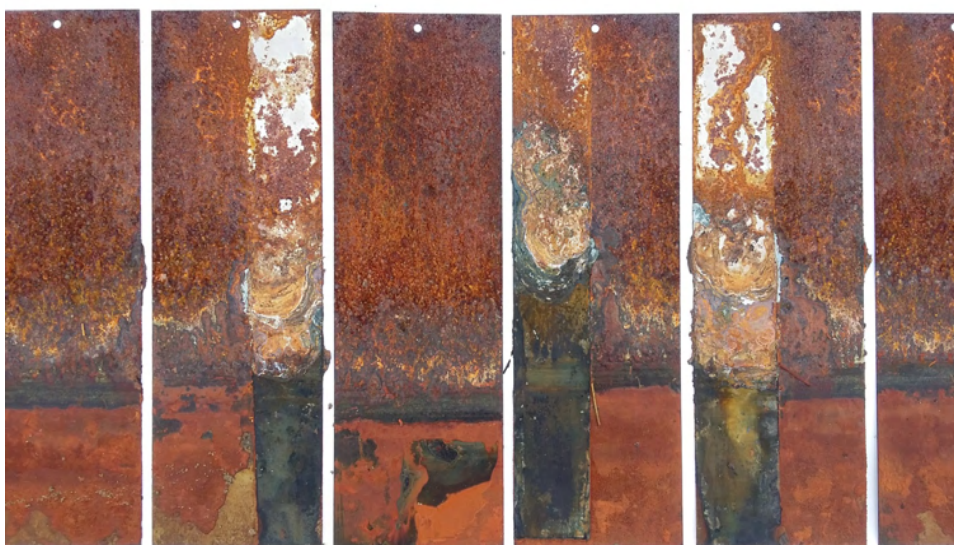


Figure 44: Image of work included in the PhD exhibition: *Rust Recordings, (Abandoned Ships)*, April 2018, 10 x 20cm each.

When I take the plates away from the ship, they hold lines of different coloured rust that can be read, like the circles on a cut tree trunk that tell stories of the weather-related growth patterns etched into the surface. The rust lines tell me whether the weather was dry (dark rust formed from salty sea water and not rain water), very wet (bright orange rust from rain water filling the inner cargo space of the ship and submerging the plates over the darker hue of seawater from waves), the duration spent on the ship (in the thickness of the line, depth of rust), wind strengths / direction and duration (spray marks across the surface or rectangular shapes where the plates are blown into each other, or triangular shapes where plastic bags have blown into the inner space of the ship and wrapped around the metal plates for some time), intermittent rain and hot dry weather (small densely situated lines of orange and darker hues where the inside of the barge fills with rain water and is then rapidly evaporated before refilling again with rainwater, and in effect dipping and drying the plates in rapid succession), see Figure 44. This close attunement amounts in vital materialist terms to a 'lingering' within a sense of 'fascination' with the matter and its mingling, 'taking them as clues to the material vitality that they share.' (Bennett, 2010, p.17).



Figure 45: Image of work in progress along the Taw: collecting *Rust Recordings* from the abandoned ship on the Taw estuary, April 2018. Removing them to leave another residue on paper (OS Explorer Map 139 Taw).

I see the processes, looked at here through a detailed exploration of *Rust Recordings*, as an active form of material curiosity enabled through repetition; a way of being and a way of thinking (through sensing) that is experimental, knowingly entangled in and fascinated by matter (see Figure 45). As Deborah Bird Rose says in *The Arts of Living on a Damaged Planet; Ghosts and Monsters of the Anthropocene* (2017), ‘we need to relearn multiple forms of curiosity. Curiosity is an attunement to multispecies entanglement, complexity, and the shimmer all around us.’ (p.G11,). Because ‘when we notice their tempo, rather than impose ours, they open us to the possibility of a different kind of liveability.’ (p.G9). This liveability and tempo closely aligns to Haraway’s ‘staying with the trouble’ (2016). The processes formed with the Taw during this research are an active attempt at a curious attunement enabled through repetition (Figures 44 and 45). An attunement into the vibrant matter of the Taw that holds a reciprocity at its core, that aimed not to ‘impose’ my body’s tempo, but to respond to the tempo and vibrancy of other matter as an active entangled agent, that aimed to repeat these actions again and again over six years in order to lay bare the minute shifts in material’s ‘agency’ and ‘power’ in ‘congregation’ with different assemblages ongoing within the Taw (Bennett, 2010, p. 20).



Figure 46: Image of work in progress along the taw: collecting the metal plates that had been left on the smaller of two abandoned ships along the Taw, 2018 to form *Rust Recordings*. The process aimed to hold a material 'curiosity' with the mingling of metal, barnacles, weather, salt spray, wind, more-than-human worlds (seeds, birds nesting, insects), that were all intra-acting with the ships and the plates left attached to the ships as a non-human 'witness' (relating to Haraway, 1997, Deleuze, 1994).

Chapter three conclusion:

In conclusion, I return to the questions raised in the introduction that have been addressed within this chapter:

- What was the role of repetition in relation to both walking as a methodology and the processes developed?

Chapter Three frames walking as a repetitive methodology in relation to walking the same or similar routes along the Taw over a six-year period. This was adopted as a strategy to

form a close attunement to a place, resulting in the development of a series of processes to record this attunement. This was framed through the lens of Deleuze's *Difference and Repetition* (1994). Deleuze's AB, open repetition was applied as a way to contextualise the 'A' actions of left foot making contact with the ground, or left hand touching the right side of the abandoned ship's hull, with 'B' actions being the right foot / right hand combination. The chapter investigated how the experiences of each open repetition informs the next, so that in this way each walk and each process is entangled with the next through open repetition.

- How can repetition as an approach enable the small shifts in matter to be evident as a trace within the work?

The repetition of each process understood through *Difference and Repetition*, highlighted how tiny 'divergent' patterns become apparent through the minute differences evident over the research. This holds a close relationship to Haraway and Barad's 'diffractive reading through' as a mode of attending to difference, and the role of Bennett's vital materialist (2010). The divergent patterns were examined in detail through the series *Rust Recordings*, looking at the mark-making / residues as a record of material entanglements that formed a 'palimpsest', and the knowledge held within and generated through this process as part of the wider research.

- Where does memory inform the research and how?

The chapter situates memory within the research through the residue of stories told by my grandmother about the Taw, which often shaped each walk and my experience of walking within the estuary. Memory is contextualised through Deleuze as shaping human experience, something I explored in relation to shaping (my) human experience of a place (the Taw). There is a sense of memory held within the vital materials and the unexpected outcomes of assembled matter / things along the Taw (Bennett, 2010).

- How can repetition act as a witness to human and non-human intra-actions?

Given that the personal has already been understood as integral to this research and through Barad's writing as an objective mode of research provided it is acknowledged amidst other phenomena in the experiment, Deleuze's writing about the self, holding 'thousands of little witnesses which contemplate within us' (1997) has been positioned in relation to the research as an extended notion of witnesses that are both human and non-human. Witnesses were understood as memories and as matter that hold a reciprocal relationship and are part of the material entanglements that make up a place and frame our human experiences of a place. This thinking was connected to Haraway's 'modest witness' (1997, 2016) as a way to 'make a fuss' in the context of environmental degradation, with the walks and the development of the processes with the Taw, as a form of witnessing (of place and our human treatment of it).

- How is time / scale understood in the research in relation to the human and non-human?

The chapter highlighted the idea that humans experience time and space differently to more-than-human worlds through the scale of the human body, in relation to Deleuze's thinking. This was extended to the time / scale of the human debris encountered along the Taw and the human / non-human assemblages that emit a sense of vibrancy and power (Bennett, 2010).

The next chapter will examine the relationship of the work to mapping as a way to re-map the Taw and its vibrant matter *through* slow walking and experimental creative processes.

Chapter Four: Collaborative re-mapping through care, reciprocity and touch; a counter cartographical approach

Chapter summary:

This chapter considers the work as maps of the estuary generated collaboratively with the Taw, through a careful and slow tuning into the matter of the estuary. These are understood to be *matter maps*. Mapping is explored in relation to working with materials in and of the Taw in ways that are reciprocal and attend to the continual flux and entangled nature of 'place'. This is framed through Springgay and Truman's re-mapping and co-mapping through a counter-cartographical framework (2018), which seeks to move mapping away from ownership, imperialism and a fixing of the landscape in documents of power and control, towards records that attend to the often overlooked; maps that offer up new ways of knowing through exploring small differences and shifts in matter. Mapping as an artistic process is explored through Edward Casey's *Earth Mapping* (2005) with touch positioned as a mode of slow mapping through Barad (2007), Haraway (2016) and Puig de la Bellacasa's notions of ethics and care (2017). This approach aims to open up re-mapping (within a counter cartographical framework) as a mode of care and responsibility in terms of *what we know* and *how we know it* in relation to place inquiry.

'The map is open and connectable in all of its dimensions, it is detachable, reversible, susceptible to constant modification. It can be torn, reversed, adapted to any kind of mounting, reworked by an individual, group or social formation. It can be drawn on a wall, conceived of as a work of art, constructed as a political action or as a meditation...A map has multiple entryways.' (Deleuze & Guattari, 2013, p.12).



Figure 47: Observation image: human debris mixing with non-human matter in the cargo container in the smaller barge, that after storms had filled up with water (2019). There is an unlikely transfer between the properties of the plastic bottles and the properties of the rust particles that have coated the bottles over time.

In Bennett's terms, these are the unexpected assemblages of wind, water, heat and evaporation.

Extract from field notes October 2018:

Fishing twine

Dummies

Lolly pop sticks

Shotgun cartridges

Bottle tops. Clear, white, green and red. Some carry the message 'please recycle me'. A lonely lament in the landscape. Sitting in the sand waiting for more lifetimes than I can compute to decompose. Who or what should recycle them I wonder?

I bend down to pick them up. A different kind of beachcomber making a map of these plastics washed up on the estuary. Bend and untangle. Taking care not to destroy their seaweed home, unplucking muscles and cockles now growing around the orange plastic twine. A watery bindweed choking the life out of its host. As my pockets and bag fill with plastics, the way behind me is clear. The way ahead strewn with the unwanted debris of our everyday lives. I'm as complicit as you are so let's not look away. I look behind me and the trace from there to here is clear, but ahead the path seems uncertain, there are tangled brambles in the way, the tide is coming in, the ruins of the old power station in the fading light looks ominous. I realise that I am alone and that no one knows where I am. I'm not lost, but neither am I found. And all the while the texture of the ground scratches into the metal plates on my shoes. Clack. Clack. Clack. The earth will leave its trace. Does that make me the fossil?

At the start of the research, I was responding to place through walking, making work that I thought of as *Experiential Maps*. These works, mainly on canvas, framed my early walks and research in the initial months of the project. I was incorporating ground rubbings directly onto canvases, that I carried to the start of a walk. This formed a register in a 1:1 scale of the textural surface of the ground underfoot. I often layered other information collected during a walk like tracings of the cracks in the ground over a dry summer, or spills traced from the pavements in a city. I was incorporating information from aerial and horizontal views, mixing different scales onto these maps; scales that were unreferenced.

As set out in Chapter Two, as the research moved to focus on the Taw estuary, I was looking at Michelle Stuart's earth and seed works from the 1970's and 1980's that hold within them the very matter of the places she was exploring. I was also influenced by Mark Bradford's map-like work (for example *Through Darkest America by Truck and Tank*, 2013) made with collected free adverts and scraps of paper from walks around his L.A. neighbourhood,

forming aerial and material cityscapes. I was looking too at Daro Montag's work emerging from his 2007 *This Earth* project⁴², thinking about his earth core samples and buried films as recording devices in relation to what Frederic Gros calls being *earthbound* (2014). This links to Ingold's 'earth human' (2020) and Montag's description of our human bodies as '...soil that has learnt to talk and reflect on its place in the cosmos' (2007 p. 20). I was reading at that time Edward S. Casey's grouping of artists including Stuart in relation to *Earth Mapping, Artists Reshaping Landscape* (2005). These artists often work with earth or found matter from a place, something Casey underscores as artists working with and through mapping. This is a grouping I would argue could be extended to a much wider contemporary transdisciplinary movement that attends to artistic approaches to (re)mapping, woven with walking methodologies and other practices exploring contemporary environmental concerns in relation to 'places'.

Casey's grouping holds a connection to Haraway's exploration of transdisciplinary artistic practices as a mode of 'staying with the trouble' (2016), Harriet Hawkins' collaborations between artists and geographers to examine place and 'world making' (2014), and Springgay and Truman's counter cartographical walking artists (2018). This is not intended to be an exhaustive examination of writing about artists working across disciplines related to mapping practices, but to situate the writing that follows amidst ongoing contemporary discourse.

Records attending to difference: maps belonging to the earth

As I began the walks on the Taw, with the intention of forming a closer relationship with the estuary, I thought about Edwards Casey's question framed in relation to his grouping of artists working with mapping: 'What if a map were about something belonging to the earth itself?' (2005, p. 4). It was a question that chimed with the short story I have often read, *On Exactitude in Science* (Jorge Luis Borges, 1946) about a map so large and so accurate that it

⁴² See Appendix Three for artists analysed during the research.

directly mapped, on a 1:1 scale, the earth itself, left to decay once it was no longer useful for its inhabitants.

Through the walks within the estuary and through thinking about this question, the project moved away from trying to ‘capture and convey a sense of place’ towards ‘working *with* the place and its materiality’. This shift in approach examined in Chapter Two recognised that my body became part of the landscape and the interconnected web of the more-than-human and non-human worlds. My intention with the walks along the Taw was initially to develop ways to bridge the gap between my walking body, the estuary and the work made through the walks. Over time this shifted further towards an understanding that there was no ‘gap’ to bridge; my walking body *was already entangled* with the ‘vibrant matter’ of the Taw during each and every walk – it *became a part* of the estuary I set out to record (Bennett, 2010 and image below).



Figure 48: Image of work in progress along the Taw: still from video recording a walk along the strandline collecting plastics woven within bundles of seaweed and wearing the metal plates to make *Ground Texture Recordings* on my walking shoes. For video follow link: <https://www.youtube.com/watch?v=oCruvAJdIWA>

The processes that developed through the entangled encounters where my walking body meets and mingles with more-than-human worlds and non-human matter along the estuary resulted in a series of works that are unpredictable in outcome and not fully controlled by me nor by any single component in their resulting aesthetic. This was explored in relation to

Bennett's assemblages in Chapters Two and Three (2010). Importantly I see this resulting work as a series of collaborative maps that are developed through a process of *co-mapping with the estuary*. This process is flat in hierarchy so that my body is one element mingling amidst the other matter, with inputs combining together to form unpredictable and often vibrant outcomes through matter (Bennett, 2010).



Figure 49: Image of work in progress: *The humble triangle #1* graphite triangles on estuary mud painted onto Clarefontaine Roll during a walk along the Taw in 2018. The triangles were drawn every day subsequently as a way to think through drawing about the environmental degradation along the Taw and other places through daily news of looming climate tipping points (particularly post the IPCC 2018 report).

As explored through Solnit in Chapter One, 'walking...is how the body measures itself against the earth' (2006, p.31). This I aligned to a reciprocal form of measurement at the unbounded entangled meeting points (Barad, 2007) between body and earth as a form of Bennett's 'assemblage' exerting an unpredictable 'thing-power' (2010). I positioned the processes as a form of measurement of the many material intra-actions along the Taw. The map too is a form of measurement with a long and troubled history. The first scale mapping emerging as it did through the 18th Century Cassini Maps of France that were literally measured through footsteps pacing out triangular trigonometry points against the earth's

surface. The trigonometry triangle is a symbol that has emerged through the work since the initial Salisbury Plain walks. On the Plain, the triangular warning signs of ‘unexploded debris’ found their way into the paintings, and later on the Taw I began drawing triangles on the surface of estuary clay painted onto paper and onto the OS Map 139 of the Taw (see Figure 49).

This more controlled mark-making emerged through a sense of growing frustration about how our places are ‘used’, about the human ‘control’ of mapping. I had the intention of obliterating the data held within the OS Map 139 of the estuary with triangles in graphite covering the surface (see Figure 50). It was in direct reference to the trigonometry triangle of the Cassini map and its long legacy in the now of land ownership, colonialism and resource extraction. By making only the triangle evident on the surface of the OS map, all else was buried beneath – the ‘valuable’ information that leads to land ownership and boundaries becomes unreadable and useless – instead replaced with a durational daily rumination on the legacy of *the humble triangle* (that gave its title to the series). This was a mode through drawing of asking questions about the legacy of mapping through empire and ownership, and about finding a repetitive mechanism through which to hold a space to think (through drawing) about the treatment of this and every place in the now through the daily news of looming environmental tipping points. These ongoing series called *the humble triangle* have the aim of ‘making strange’ the maps (relating this to slow walking as a disruptive methodology in Chapter One). They also have the aim of visually questioning (through mark-making action) what is included on the map, what is *useful*, what is not, who decides and what the legacy of mapping is in how we experience places today. By making the maps unreadable they hold the intention of making a critique about the inherent value of what is mapped, and the power associated with who it is mapped for (see Figure 50).



Figure 50: Image of work in progress (later version included in PhD exhibition): *the humble triangle #2 (OS Map 139)* Graphite on OS map 139 92 x 122cm; slowly I covered the entire surface with small graphite triangles, drawn each day from 2018 – 2021.

The triangle as trigonometry was once the height of technology; the measuring device that led, beyond the Cassini maps of France, to mapping the surface of the earth, the constructions of boundaries and ownership of land and the displacement of indigenous peoples. *The humble triangle* as a measuring device has quite the legacy in how we exist within our landscapes in the here and now. As a mode of ‘staying with the trouble’ (Haraway, 2016), there is a lot to learn in terms of how quickly the technology of triangle as trigonometry moved towards documents of power and control that benefitted the few. As highlighted in Chapter Two, Barad explores the relationships of measurement in relation to agency, matter and a sense of performativity;

‘Measurements are agential practices, which are not simply revelatory but performative: they help constitute and are a constitutive part of what is being measured. In other words, measurements are intra-actions (not interactions): the agencies of observation are inseparable from that which is observed. Measurements

are world-making: matter and meaning do not preexist, but rather are co-constituted via measurement intra-actions.’ (2012, p.6-7).

Barad goes on to say that ‘what is at issue is the very nature of nature’ and further that ‘measurements are material-discursive practices of mattering.’ (ibid). If maps are formed through a series of measurements; then what is measured? How it is measured? By whom? For whom? All of these questions and many more have much wider implications in terms of ‘world-making’ (ibid).

Maps as documents of power are not neutral, but are loaded towards and commissioned by the structures of power that control the very land that is mapped. If maps directly affect *what we know* about places through the *how we know it* of the practice of mapping, then in Haraway’s terms mapping is another ‘matter to think with’ (2016, p.12). My research aimed to examine other ways of mapping through entangled intra-actions which, as set out in Chapter One, holds an inseparable ‘ethico-onto-epistem-ology’. (Barad, 2007, p. 90). With this in mind this chapter explores mapping as a practice of knowing that holds central the ethical considerations of *what* is known and the *way* it is known in relation to the artistic processes developed and the materials used within this research.

The artwork as maps do not aim for control, but as mapping to tell different stories of small differences through encounters with matter on the scale of everyday entangled intra-actions and on the scale of a close attunement to tiny material shifts. An example of this is shown in Figure 51, exploring tiny differences in soil mingling with polluted river water. (Re)mapping in this way can offer records of the Taw (or indeed other places) that can tell in Haraway’s terms ‘other stories’ of a place *through* matter and through a close engagement with the often overlooked and fleeting (2016).

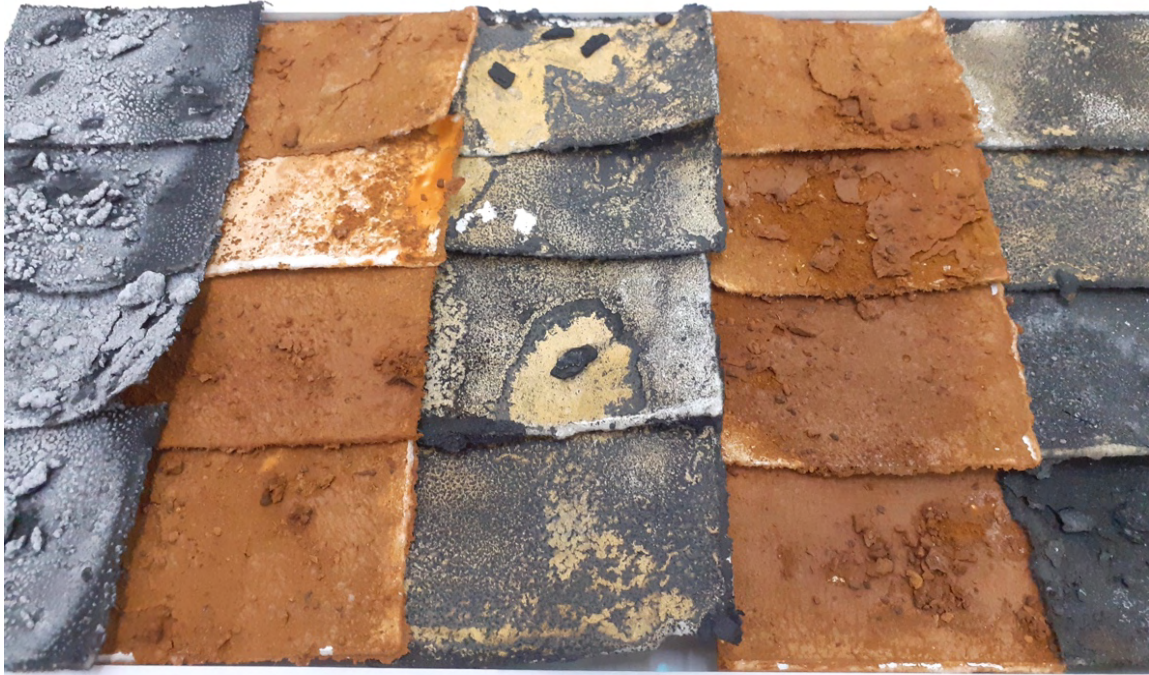


Figure 51: Image of work included in the PhD exhibition: *Earthworks*, 2019 – 21, Taw Estuary earth on paper, 7 – 5cms each. Collected earth samples from walks along the Taw, ground into, mixed with polluted river water and left to evaporate onto paper. The series works with collected earth that has been eroded from the banks of the Taw through increasingly frequent and violent storms and high tides leading to local flooding. It holds a visual connection to swatches of sample wallpaper and to pH test strips for soil and water to determine the acidity / soil and water health.

Casey highlights four kinds of mapping. The first two are more conventional aerial maps associated with Ordnance Survey maps or similar and the 'You Are Here' navigation maps; both forms of mapping that have again emerged through long and complex histories of conflict. The second two forms of mapping Casey identifies have been of particular relevance in helping me to frame and develop my own mapping processes in the Taw. These are 'mapping with/in' and 'mapping out'. In relation to a grouping of artists, Casey states that 'mapping with/in' explores 'the way one experiences certain parts of the known world...how it feels to be there, with/in that very place or region.' (2005, p. xxi). Whilst he examines mapping out as 'getting the experience into a format that moves others in ways significantly similar to (if not identical with) the ways in which I have myself been moved by being with/in a particular landscape.' (Ibid, p. xxii).

I situate this research as maps that straddle 'mapping with/in' and 'mapping out' through laying bare the materiality, the scratchiness and the flakiness of the textures recorded through earth and oxide materials of the estuary. I extend Casey's definition of 'mapping with/in' and 'mapping out' to hold more-than-human and non-human collaborations within these definitions. In the context of the project the maps made with the Taw communicate the *affects* of the estuary on my walking and feeling body and my body *affecting* the mingling matter within the Taw, through a reciprocal relationship of entangled matter (Figure 52). In this way, the resulting works are affective maps that (re)map the estuary (with the estuary) as a way of working situated in relation to both Casey's 'mapping with/in' and 'mapping out' (2005).



Figure 52: Image of work included in the PhD exhibition: *Ground Texture Recordings* (November 2020), Bideford Black on Somerset, 25cm x 15cm each. Testing ideas to bring the traces of each walk together. These map the affect of the estuary on the walking body and the walking body on the estuary in a reciprocal relationship.

Extending 'mapping with/in' and 'mapping out' (Casey, 2005) to a reciprocal action, offers a mode of *affective mapping*. That is to say mapping the affect of my walking body in the Taw at the same time as mapping the affect of the Taw on my sensing body – a process of

collaborative mapping or co-mapping (see for example Figure 52). There is a reciprocity and a co-joining, or even as in Haraway's terms a form of sympoiesis, that could be extended to this form of collaborative mapping (2016). The maps no longer offer a supposedly 'detached' viewpoint as Casey describes in relation to maps we use to navigate and to own / control the land (like the OS Explorer 139). Instead any idea of detachment has dissolved into the estuary waters, so that where walking body and ground / textures / things encountered begin and end is blurry, the edges cannot be grasped. Once again in Barad's terms the boundaries are not fixed, nor are they separate, the intra-actions are entangled and the meeting points are not defined by hard outlines (2007). The work as affective material / textural maps are not 'fixed' or static. They reflect the ongoing 'worlding' of the place and the ongoing intra-actions of matter. The earth, rust and river water will gradually flake back into the earth again to offer new possibilities for collaborative or affective mapping through more slow walks in the future.



Figure 53: Image of work in progress (included in this form during the PhD exhibition): handfuls of earth collected from the base of eroding cliffs along the riverbanks, 2015 - 2021. These are ground down and made into pigment that is mixed with oil or river water to print and draw with.

A counter-cartographical framework

Springgay and Truman explore the idea of re-mapping in relation to counter-cartographies as an extension of walking research (2018). Counter-cartographies have a disruptive possibility that aim to form different readings of a place past, present and future, and to act to 'unsettle' our knowledge of places through the documents that we use to read / control / represent them (2018). In relation to the knowledge generated through the artistic processes made with the Taw, I connect counter-cartography (Springgay and Truman, 2018) with Casey's mapping with/in/out (2005) and Barad's diffractive methodology as part of her agential realist framework (2007), to generate at the entangled meeting points, a method of *collaborative mapping with place* that opens out readings of a landscape that tune into the tiny shifts and differences *that matter* through tiny differences *with matter* (see Figures 52 and 54). Through this approach maps are formed through a series of processes that act as shifting and unstable records through which to gain different knowledge about a place, housed within different material-discursive records. I have named these *matter maps*.



Figure 54: Image of work included in the PhD exhibition: *Ground Texture Recordings (January 2019)*, Bideford Black and Taw Clay on Somerset, 35 x 65cm. Collected earth on paper - mapping the Taw with the matter and textures of the estuary.

Counter-cartographies and futurity

Springgay and Truman frame re-mapping as a way to convey ‘movement and rhythm of place, sensory materializations of place, and memories that are not simply in the past, but encountered in the present.’ (2018, p. 107). Counter-cartography and strategically re-mapping the past are enabling ways ‘for imagining a different future’, whereby ‘re-mapping space and time are significant components to a counter-cartographical approach to walking methodologies.’ (Springgay and Truman, 2018, p.113). The processes developed in collaboration with the Taw, hold the aim to intra-act within the ‘movement and rhythm of place’ that I extend to an understanding that these rhythms and memories are situated

within the material intra-actions along the estuary (Barad, 2007). For example, through slowing and tuning in, to carefully untangle seaweed and plastic fishing twine, to ‘map’ the fishing twine with the earth of the estuary (*Ghost Plastics*⁴³), the resulting body of work aims to offer a series of maps that ‘imagine a different future’ (Springgay and Truman, 2018, p.113). This future may be hopeful, pointing to a future where the Taw and all coastlines do not have a near continuous line of washed up plastic debris framing the experience of places for humans and more-than-humans. It may be a future where packaging is made from biodegradable seaweed to replace the plastics lining our shores. This relates to Haraway’s imagined futures as a mode of ‘staying with the trouble’, futures explored through her multigenerational Camille stories to forge sympoietic relationships spanning into distant time (2016).

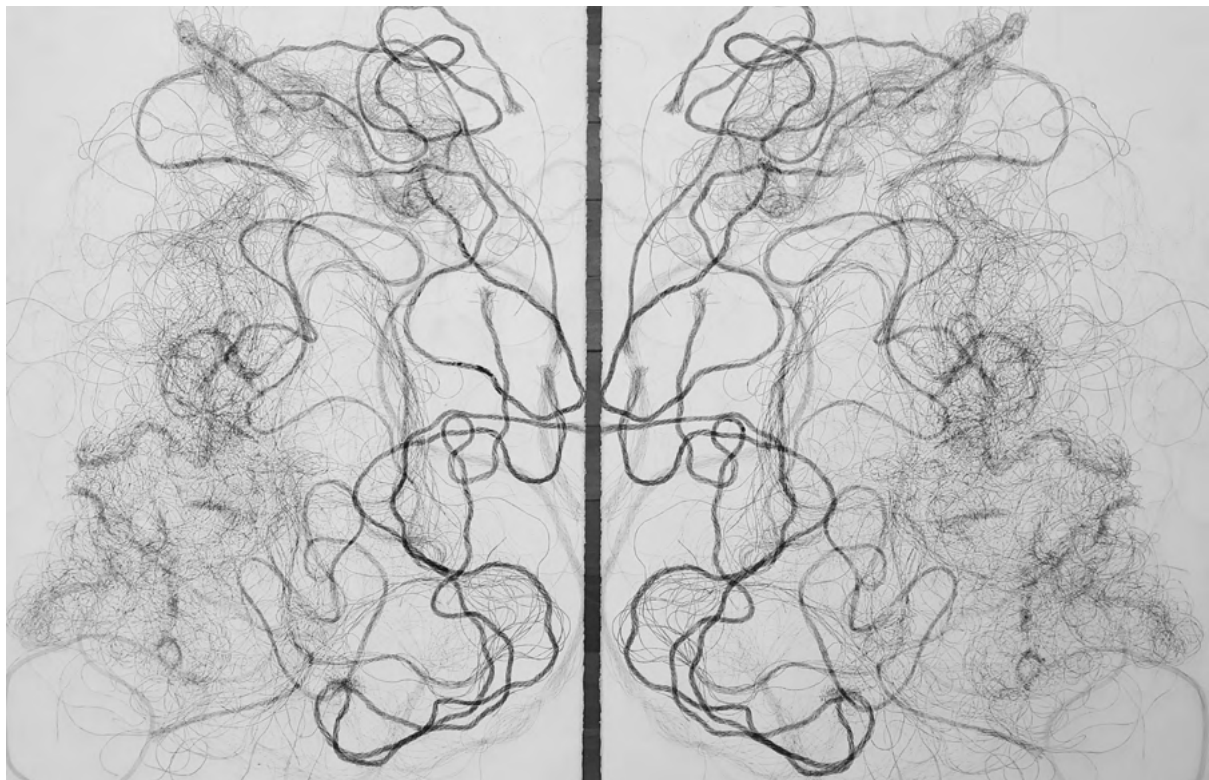


Figure 55: Image of work included in the PhD exhibition: *Ghost Plastics (part three, Taw Estuary, May 2021)*

Bideford Black and river water on Somerset 75 x 45cm x 2.

⁴³ See Appendix One for further details and images.

A re-mapping approach also attends to possible futures embedded within a darker understanding of the future as imagined through the effects of the human induced climate crisis and ongoing actions in the present. This future is understood through a present knowledge, that the weight of human waste on the planet is now greater than the weight of all human life⁴⁴. A future that knows in the present that over half of UK plastics are knowingly sent overseas to places that cannot recycle them, countries that burn or dump them into rivers to find their way into the sea.⁴⁵ A future that knows in the present that every piece of plastic ever made is still existing on this planet,⁴⁶ and will continue to do so for around 500 long years, with the average human currently eating a credit card sized amount of microplastics each week.⁴⁷ This darker understanding of the future through re-mapping the present leads to a heightened understanding that this small stretch of North Devon coastline, like others, is likely to be under water as glaciers and ice-caps continue to melt at record rates.⁴⁸

Forming *matter maps* as a record of the matter encountered in the present, holds a record for the future that acknowledges the rapid climatic changes experienced by our planet in the present (for example Figure 55). In Haraway's terms, through mattering about the matter of the Taw (the matter of the human debris, the eroded earth from the riverbanks, the decaying abandoned industrial structures), my understanding of the things and stories that make worlds, that make this *estuary world*, was heightened, a way of being that is aligned to Haraway's staying with the trouble (2016). Modeen and Biggs place the 'reimagined fieldwork' of contemporary artist's working with place as 'the manner by which we turn from absorbing the hard lessons of the past to a more hopeful, more collaborative and active praxis that can first imagine, and then create, a more sustainable future.' (2020,

⁴⁴ <https://www.scientificamerican.com/article/human-made-stuff-now-outweighs-all-life-on-earth/>, accessed April 2021.

⁴⁵ <https://www.theguardian.com/environment/2021/may/17/uk-plastics-sent-for-recycling-in-turkey-dumped-and-burned-greenpeace-finds>, accessed May 2021.

⁴⁶ <https://www.greenpeace.org/international/story/7281/every-single-piece-of-plastic-ever-made-still-exists-heres-the-story/>, accessed March 2021.

⁴⁷ <https://www.panda.org/?348371/Could-you-be-eating-a-credit-card-a-week#:~:text=In%20this%20first%20Dever%20global,equivalent%20of%20a%20credit%20card.&text=That's%20approximately%2021%20grams%20a,over%20250%20grams%20a%20year> accessed May 2021. This was taught to me by my six year old who learned it from watching Blue Peter.

⁴⁸ <https://www.theguardian.com/environment/2021/jan/25/global-ice-loss-accelerating-at-record-rate-study-finds>, accessed February 2021.

p. 220). Making in this way, through collaboratively mapping with matter, asks: by (re)mapping, is it possible to foster a closer and reciprocal relationship with this place through slow and careful processes, a tactile and embodied close observation? Is it possible to imagine and attend to a different future through changing the actions of our (human) present?



Figure 56: Image of work included in the PhD exhibition: *Ghost Plastics (part four: Taw Estuary Dec – April 2021)* studio image, 2021.

This 'counter-cartographical' framework is counter to western capitalist cultures that hold place through the history of mapping as a bounded entity for ownership and imperialist control, leading to industrial exhaustion of natural resources for human financial gain (of

non-indigenous peoples, situated within the Global North). This financial gain through resource extraction has been shared amongst the few, and left the many in precarious and exploited existences (often in the Global South). This links directly to the impact of resource extraction through mapped and controlled land within the context of the climate crisis (Springgay & Truman, 2018). Through the lens of counter-cartographies, I position the simple acts of running my hands along the remnants of post-industrial structures in the form of abandoned ships and jetties (*Scratching the Surface*), and using metal plates to record my walks over the deep geological time of rock formations (*Ground Texture Recordings*⁴⁹) as *matter maps*. They hold another record of this place as it is, in the evolving worlding of the present (or recent past of the project). The *matter maps* emerge from within the unexpected ‘thing-power’ at the porous meeting points between hands and feet, earth and rock, rust and barnacles. The *matter maps* are a mode of ‘lingering’ with these unlikely assemblages, holding a trace of their vibrancy within the surface of paper, metal and mud (Bennett, 2010). They are textural and earthy records made with collected earth sitting amidst the backdrop of increasingly stark IPCC warnings of impending environmental and ecological tipping points⁵⁰. As sea levels rise, not only will habitats and species continue to be lost, but the vibrant textures and specificity of earth along the Taw, which took millions of years to form, will be under water. By the time my children are my age, these fragile earthy records of the estuary may be one of the few records of materiality of the banks of the Taw as they exist today.

Springgay & Truman warn however, that ‘Counter-cartographies and an archiving practices might in fact reproduce the very geographies they seek to undo.’ (2018, p.113). They highlight the central importance of *futurity* in walking methodologies in relation to re-mapping place as they highlight ‘the ways that the future is projected and re-imagined. It also considers how the future is implicated in the past and the present, through different conceptualizations of time.’ (ibid p.113). These *Futures* are explored through the matter of the now, that Haraway holds within speculative stories, which I have examined through

⁴⁹ See Appendix One for details and images.

⁵⁰ <https://www.ipcc.ch/sr15/chapter/spm/> accessed November 2018.

matter maps. Barad's writing about feminist theorists and feminist phenomenology⁵¹, in particular Judith Butler's *Bodies That Matter* (2011) also holds relevance in how I have understood my walking body and its non-neutrality and the structures within which I sit. This understanding frames my experience of the Taw and is situated within the entangled encounters with matter along the estuary. This relates to Barad's assertion (through Bohr's philosophy-physics) that we humans are 'a part of that nature that we seek to understand' (2007, p.26). The work as *matter maps*, places this understanding within them. The entangled matter within the surface is a trace of the nature 'that we seek to understand' (ibid). What would happen to our human understanding, if all places were mapped with and through this understanding forming mapping approaches made collaboratively with the matter of each place as a mode to notice and *care for* rather than extract and profit from – a mode of imagining different futures through the materiality of the now?

Material mapping through affect and touch

The *matter maps* chart the many points of entanglement between the earth and our increasingly destructive human presence through a temporal record of human debris left to wash up and decay along the estuary, and through a record of the textures touched that will be lost underwater as human-induced sea levels continue to rise. The maps are formed through deliberate, slow and careful ways of working that result in a body of work that holds a textural and material quality. This allowed the space and time to shift and evolve after the initial making. These textures and materials were felt under hand and under foot, their properties intimately explored through repeated touch over time, through the many processes that stemmed through this sense. Touch is therefore central in the making of the textural *matter maps* of the Taw – my touch and the entangled reciprocal touch of other matter.

⁵¹ A contemporary application of phenomenology in environmental terms to aim to think and act across boundaries of traditional thinking across natural science and metaphysics to forge relationships with the natural world through a different approach (Wood, 2001).

Through my slow and disrupted estuary walks over time, I developed a heightened awareness of the textures under foot. So that away from the estuary I began to think about the walks in material/textural terms, I started to think of them as *matter walks* forming *matter maps*. The walks were divided through my embodied experience of walking the Taw, into sections framed by the feeling of different textures felt through my sensing feet and hands; what Ingold refers to as a knowledge felt through the soles of our walking feet (2020). The shingle rock formation framed a very different walking experience to the sand and gravel paths for example. Over time the focus of the work itself became a focus of texture through materials. It became much more about the feeling of the earth under foot and rubbed between fingers, of the feeling of the actions of unpicking human debris from seaweed, or the flaking rust and dying barnacles falling from the jetties and ships.



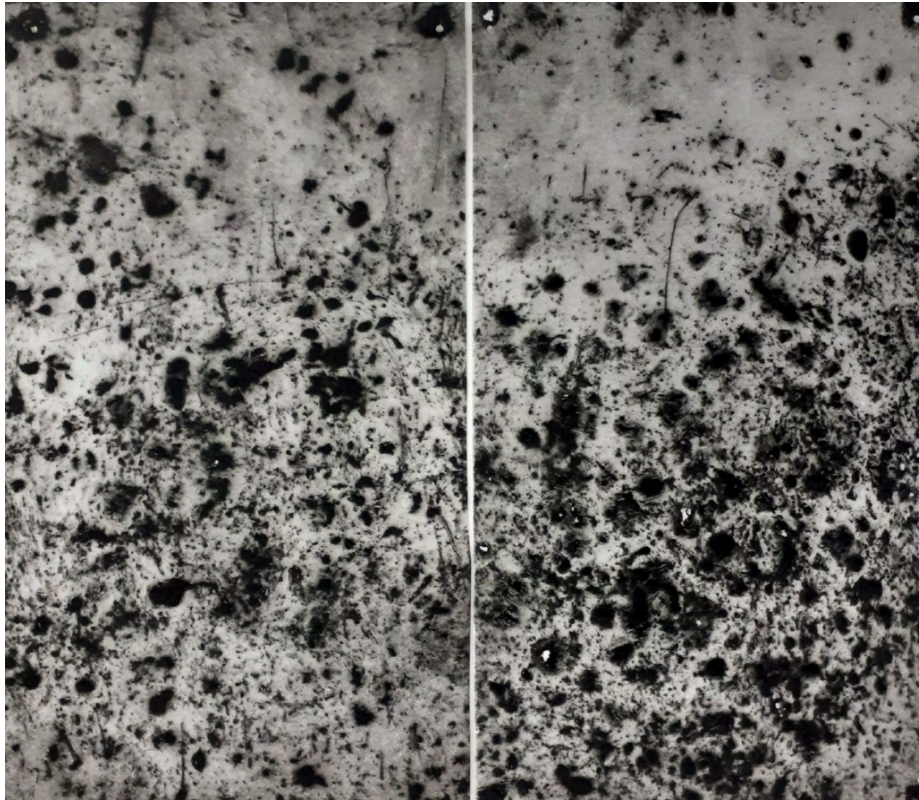


Figure 57: Image of work included in the PhD exhibition: *Ground Texture Recordings (two walks, November 2020)*, Bideford Black on Somerset, 15cm x 25cm.

The work as *matter maps* developed with the Taw did not need the inclusion of a key to decipher the symbols, instead the trace of motion and materiality on (and in) the surface of paper and metal *was the key* to this place. The things that were mapped were not static but in flux, not fixed or permanent but fleeting. Returning to Casey, the work made became very much ‘part of its very surface’ in terms of ‘belonging to the earth itself’ (2005, p.4). I would say that the work ‘belonged’ neither exclusively to me nor to the earth itself, but to both. The work acted in this way as *matter maps* holding direct material traces of the entangled meeting points between the textures of the Taw and my sensing body. This is aligned to an approach grounded within ‘reciprocity’ (Abram, 1996; Puig de la Bellacasa, 2017; Stengers, 2010, Haraway, 2016), which saw my walking body becoming an ‘earth-human’ (Ingold, 2020). Again, in Barad’s terms, my walking and mapping body was not a separate bounded entity in the Taw, but a part of the Taw intra-acting with other matter along the estuary (human, more-than-human and non-human). Placing reciprocity within the research

approach, of all the senses, touch and the two-way nature of touch became central to how each process developed and how the Taw was investigated. This holds a relationship with 'touch geographies' situated within sensuous geographies as a mode of place inquiry, as Rodaway highlights referring to Montagu:

Touch geographies ... are closely linked to the ability of the body to move through the environment and pick up and manipulate objects. Touch can be both passive and active, a juxtaposition of body and world and a careful exploration of the size, shape, weight, texture and temperature of features in the environment. Touch is above all the most intimate sense, limited by the reach of the body, and it is the most reciprocal of the senses, for to touch is always to be touched. (Montagu, 1971, as quoted by Rodaway, 1997, p.41).

Touch was a 'reciprocal' way to record the agency of the matter *through the handling of matter* along the Taw. It formed an understanding about the potentially destructive nature of human touch (mine and others) within this assemblage (Bennett, 2010). Touch as a reciprocal mode of care and attunement to the web of life within which we are entangled enabled a greater understanding of how I existed within the estuary and was pivotal in how the processes as *matter maps* developed. The two-sided reciprocity and the intimate embodied experience of touch formed two particular aspects of touch that enabled a close attunement to the matter of the Taw;

'In particular, touch's unique quality of reversibility, that is, the fact of being touched by what we touch, puts the question of reciprocity at the heart of thinking and living with care. What's more, the reciprocity of care is rarely bilateral, the living web of care is not maintained by individuals giving and receiving back again but by a collective disseminated force. Thus conceived, the complexity of the circulation of care feels even more all-pervasive when we think of how it is sustained in more than human worlds.' (Puig de la Bellacasa, 2017, p.20).

The work as *matter maps* chart the many points of entanglement between the earth and our increasingly destructive human presence through a temporal record of human debris

left to wash up and decay along the estuary, and through a record of the textures touched that will be lost underwater as human-induced sea levels continue to rise. These textures and materials were felt under hand and under foot, their properties intimately explored through repeated touch over time (see Figure 58). Touch is therefore central in the making of the textural / *matter maps* of the Taw – both my touch and the entangled reciprocal touch of other matter.

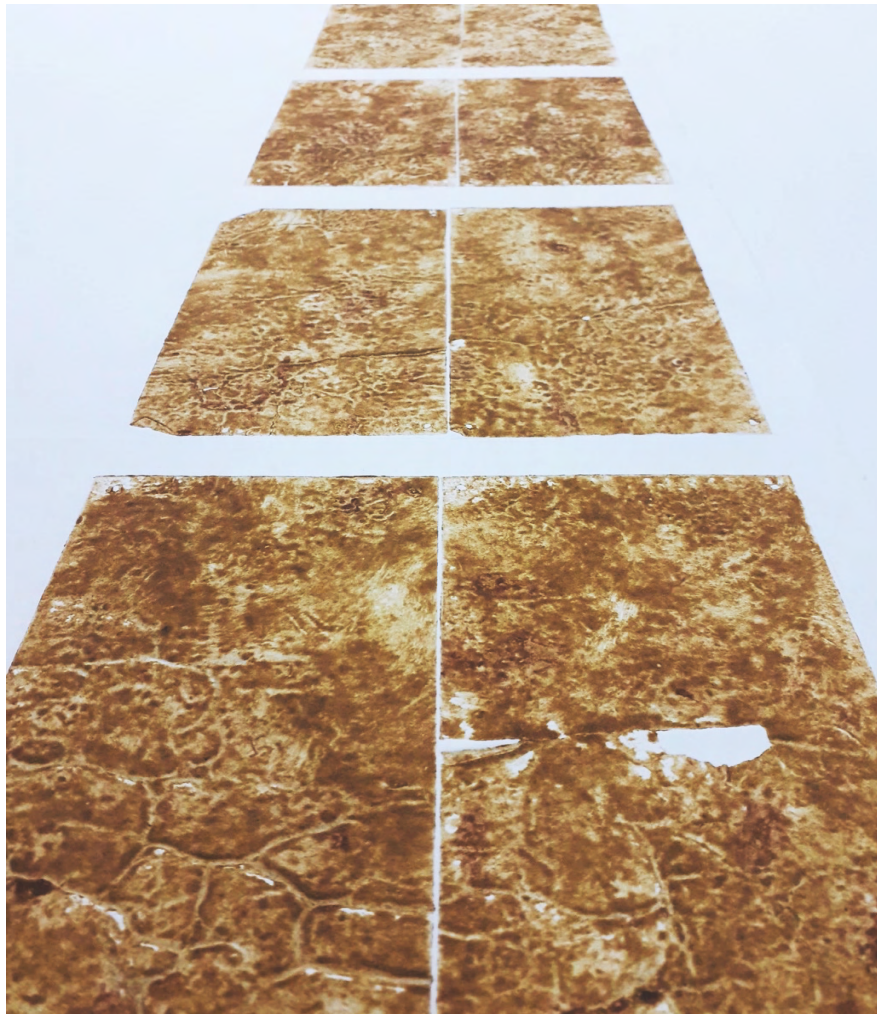


Figure 58: Image of work included in the PhD exhibition: *Ground Texture Recordings*, (December 2018), Taw Clay on Somerset, 25 x 65cm.

These tactile maps generated through entangled processes of reciprocal touch hold within their approach a sense of caring touch in relation to Puig de la Bellacasa's examination of the haptic (2017). They hold too, a different kind of knowledge formed through touch:

‘...touch expresses a sense of material-embodied relationality that seemingly eschews abstractions and detachments that have been associated with dominant epistemologies of knowledge-as-vision. Touch becomes a metaphor of transformative knowledge at the same time as it intensifies awareness of the imports of speculative thinking. In other words, the haptic disrupts the prominence of vision as a metaphor for distant knowing as well as the distance of critique, but it also calls for ethical questioning. What is caring touch in this context?’ (Puig de la Bellacasa, 2017 p.20).

These *matter maps* are made not through distant views or detached approaches, but through methodologies that place a slow, close, direct, tactile and reciprocal relationship with the Taw evolving over the six years of the research (as highlighted in Chapter One). I extend this sense of *caring touch* to Barad’s ‘ethico-onto-epistem-ology’ also considered in Chapter One within an agential realist framework, to locate the ethics of this research (here of the making) as intrinsically connected to the ontology and epistemology (2007, p. 90), so that what we know and how we know it holds an ethical approach *within* and not subsequent to how it develops. As Barad states: ‘Responsibility then, is a matter of the ability to respond. Listening for the response of the other and an obligation to be responsive to the other, who is not entirely separate from what we call the self. This way of thinking ontology, epistemology, and ethics together makes for a world that is always already an ethical matter.’ (Barad, 2012, p.69).

I extend ‘listening’ to include a listening through *all of the senses*, and in particular through a slow tuning into the matter of the estuary through touch. I align how I approached the development of each process and the materials used to act as measuring apparatus forming *matter maps* of the Taw to Barad’s ethico-onto-epistem-ology (ibid). This approach of care and a responsible / ethical approach translated to how the *matter maps* were developed. This extended the ethico-onto-epistem-ology to map making *through* the selection of materials that I brought with me to act as measuring apparatus. The papers used were locally sourced and, like the other materials within the project, were constantly recycled into the next experiments. The gardening wire was used again and again for each new boot

print attached to waking shoes. The plastic debris was cleared from the banks of the Taw to reduce the pollution entering back into the sea at the next high tide. The earth collected was earth already eroded from the river banks, picked up in the intervals between tides, before being washed out to sea. The amounts collected were collected with care (so as not to cause more erosion), with only a handful collected on each walk, so that I aimed to hold a sense of 'just enough' in my collecting approach⁵².

I understand materials involved in the making as existing within their own circular economy,⁵³ so that when one material emerged that held an impact in its making (for example the aluminium plates), another would aim to balance this (for example the removal of plastic debris from the Taw). Materials were fed forward into the next approach and constantly re-used. The most ecologically destructive material in the processes, mild steel, were off cuts from other fabrications. Although more research into the steel industry has led me to move away from using this material altogether, instead returning to work with the flaking off rust directly from the abandoned ships on the Taw. This sense of care will always be a work in progress. Any making holds an impact, my human presence holds an impact, and I do not claim that the project holds no environmental impact. However, through a close and ongoing tuning into the impact of materials selected, and the methods worked with, I aimed to work with materials that were either from the Taw, or geographically close to the Taw, in quantities and approaches that held a careful handling within them. As a result, the *matter maps* were also careful maps, maps developed through reciprocal and careful touch, as an approach that held another counter to the cartographies associated with power and mass extraction for profit. Barad states that, when humans recognise the entangled nature of all intra-actions with non-human matter, it moves human

⁵² This approach followed Pete Ward's guidance in relation to working with Bideford Black in North Devon in *Soil Culture, Bringing the Arts Down to Earth*, (Adams, C., and Montag, D., 2016). This stemmed from the Burton @ Bideford's 2015 project <https://aestheticamagazine.com/review-of-bideford-black-the-next-generation-burton-art-gallery-and-museum-devon/> (accessed March 2016). The approach also followed the North Devon Soil Management Plan: https://www.northdevonbiosphere.org.uk/uploads/1/5/4/4/15448192/br_river_catchment_area_document_final_.pdf (accessed March 2016) and within Natural England, SSSI, <https://designatedsites.naturalengland.org.uk/PDFsForWeb/VAM/1000016.pdf> (accessed March 2016).

⁵³ Circular economy as a mechanism to work within finite resources and eliminate waste through constant re-use - <https://www.ellenmacarthurfoundation.org/circular-economy/concept> (accessed March 2021).

ethical behaviour to become situated *within* each action, not separate from it (2007).

Human behaviour is moved away from an anthropocentric mode of behaviour, towards a mode that Barad highlights as a post-humanist approach to knowledge making practices; knowledge making with more than human and sometimes non-human worlds placed within a horizontal ontology (ibid).

Touch is complicated and reciprocal, it can be destructive and uninvited, but touch relating to a careful touch can, according to Puig de la Bellacasa, lead to ‘a sense of careful reciprocity’ that she later relates to a ‘disruptive sense of care’ (2017, p.120). Touch in the context of the research is also complex. It is gentle and careful in the untangling of the plastics from seaweed (*Ghost Plastics*), but it is also abrasive, allowing the barnacles to scratch indents into the metal plates on hands that feel the abandoned ships (*Scratching the Surface*)⁵⁴. I am reminded through each action of the destructive relationship of humans with our places, of my own destructive traces as I walk within this and other places. Here there is a paradox, the scratchy resistance of these processes led to a heightened awareness of my and other human trace that has led to me taking more care about how I intra-act with matter in a place; an acute awareness about what I tread on and over as I walk (literally) – the tiny non-human and more than human worlds existing in a minute scale that working with the matter of the Taw generated a careful and close understanding of.

Touch is positioned as a mode of extended listening to afford a close tuning into the Taw. To this end the *matter maps* hold within them not a locating of matter in spatial terms, but the residue of matter acting as a trace of entangled encounters along the Taw. This trace holds the residue of the unpredictable thing-power of matter’s vibrancy, as set out in Chapters Two and Three (Bennett, 2010). These are entangled encounters too with my childhood memories of this place, and with the unfolding knowledge of the climate crisis that we find

⁵⁴ See Appendix One for images and further details of the work.

ourselves living within. In this way, the *matter maps* that remain hold a record of tangled meeting points between place, memory and emotion.

Matter maps as a mode of emotional mapping

As set out in the introduction, the Taw I found on these walks was not the Taw of my childhood memories. Housing estates had covered wild-flower meadows, the estuary waters were now too polluted for swimming, plastics floated in on each tide, engine oil was left to leak out from the abandoned ships, a luxury tower is earmarked to cover the now demolished power station marking the edge of the 'biosphere'. The emotions I felt on these walks were less nostalgic for a past and more 'solastalgic' through the understanding that this place is changed because of human environmental degradation (Albrecht, 2005). An environmental degradation that Latour places within the Anthropocene of human touch (2018). Finding this term too human-centred, Haraway instead puts forward the Chthulucene as 'another figure, a thousand names of something else, to erupt out of the Anthropocene into another, big-enough story' (2016). Whether Anthropocene or Chthulucene, the scale of this 'thing' is too vast for humans to comprehend, as Morton highlights, the 'hyperobject' that is global heating makes hypocrites of us all, we are situated within it, our decisions are compromised each day because of it (2013). New mapping expeditions aim for the depth of the sea to blast-mine for rare minerals in order to make batteries to power electric cars for the Global North to 'reduce our carbon footprint.' Our relationships with place are complex, our relationship with nature (given that we *are nature*) is complex. Our relationship to mapping holds a long legacy laden with conflict. Within this technological and digital age, mapping the depths of the sea and the farthest corners of space holds weighty possibilities for how we live in the present and the future. Again relating to Haraway's 'Camille' stories as a way of speculating on possible futures stemming from the knowledge of the now (2016).

Again, Barad and Haraway's examinations of how we generate knowledge and for who, is important. It reminds us of the possibilities that knowledge can be formed that is made *with* the non-human, made *with* a reciprocity and a responsibility (2007, 2016). A counter-

cartographical knowledge that explores other ways of knowing a place through *matter mapping*, holds the possibility of finding creative ways to hold traces of Bennett's vibrant entanglements with matter (2010), not for extraction and profit, but as a mode of close and careful listening. Records of matter's vibrancy formed collaboratively in the now for unknown generations in the future as speculative matter stories of the Taw.



Figure 59: Image of work in progress along the Taw: painting estuarine clay held in rock pools at low tide onto 10 metre long paper roll, this work was then drawn upon with graphite to become *the humble triangle #1*, April 2018.

Chapter four conclusion:

In conclusion, I return to the questions raised in the introduction that have been addressed within this chapter:

- How does the work relate to mapping?

Through this chapter I have examined the work as a form of collaborative *matter maps* that aimed to map the entangled encounters within the Taw through material and textural residues. This was contextualised in relation to Casey's mapping in/out and Springgay and Truman's re-mapping within a counter cartographical framework (2018).

- How does mapping relate to measurement (of place)?

Mapping was framed within a legacy of measuring the landscape for the purpose of ownership, control and resource extraction. *Matter maps* were examined as a way to re-position a collaborative approach to mapping *with* the Taw and its materiality. A mode of futurity was examined through the complex assemblages of materiality encountered within the now.

- What is the relationship of the work to Counter Cartographies and other contextual frameworks?

The *matter maps* were situated within a counter-cartographical framework (Springgay and Truman, 2018) that attends to the fleeting and unnoticed (in the shape of the textures, the plastic debris, the abandoned ships along the Taw) in order to form maps of this matter. This was further contextualised in relation to what we map and how we map it as having a direct relationship to world making (Haraway 2016). A reciprocal, counter cartographical approach was put forward as a mode of extending Casey's definition of mapping with/in and mapping out (2005) to hold more-than-human and non-human collaborations within these definitions in relation to the knowledge generated through the research.

- What is the relationship to the senses – and a sensorial mapping? (touch in particular)

As examined through this chapter, the maps are made with matter, *through* touch, amidst the matter of the estuary. Touch was understood as reciprocal, and holding the possibility of fostering a greater sense of care for the estuary through Puig de la Bellacasa's notions of care and reciprocity (2017) and through Barad's ethico-onto-epistemology (2007).

- How can mapping methods work collaboratively with a place?

Through the lens of a flat ontology (Harman, 2018) and a reciprocal approach to working with the matter of the Taw at the entangled meeting points of the human, more-than-human and non-human, the traces that remain within the artwork were understood as a series of collaborative textural, *matter maps* of the estuary.

- How can the work as *matter maps* offer different records to foster care / responsibility towards a place *through* the approach to making?

Mapping was framed in relation to the research as a mode of close attunement to the entangled material intra-actions along the Taw. This entanglement was explored in relation to touch and to the reciprocity of touch as a mode of care and Barad's ethico-onto-epistemology (2007) as a way of tuning into the materiality of the Taw in all its vibrancy (Bennett, 2010).

Chapter Five: Pulling strands together, from the grid to the anarchive – exploring ways to share the work

Chapter summary:

This chapter explores different approaches to bringing the work together. These approaches began with a reliance on the use of the grid as a mapping reference that aimed to hold forth a sense of Deleuze's *Repetition and Difference* (1994), but through exploration and exhibition, instead had the effect of closing down the work and holding it in a confined and static space. The discovery of Massumi, Manning and The SenseLab's 'anarchive' (2016) as a possible approach to open up conversations and shifts between the material traces / processes held within the different work proved influential. This is explored in further depth below as a mode of sharing the work and exploring the relationship to the processes and to the Taw.



Figure 60: Observation image: the larger abandoned ship from the Taw, dumped along the estuary and left to leak engine oil during storms. As it decays bits of the ship become detached and wash back out to sea, 2018.

Extract from Journal field notes January 2019:

*Our oceans are filling up with plastics, fed by the clogged arteries of dead or dying rivers,
passing the parcel of pesticides and raw sewerage,
shareholders make out while water companies line their pockets shrugging the shoulders of
each unprecedented event.
Storm surges and peak rainfalls, tampon applicators and shotgun pellets, little shit filled
doggie bags ritually gifted to the tides
Toothpick after toothpick emerges excavated from estuary muds
The rivers groan, banks burst in concrete frustrations
Plastics morph and tangle into rocks
New strata laid down suffocate earths beneath
Debris strewn, netted with the ghosts of the disregards of human discard.*

Art does not imitate, above all because it repeats; it repeats all the repetitions, by virtue of an internal power (an imitation is a copy, but art is simulation, it reverses copies into simulacra)....The more our daily life appears standardised, stereotyped and subject to an accelerated reproduction of objects of consumption, the more art must be injected into it in order to extract from it that little difference which plays simultaneously between other levels of repetition, and even in order to make two extremes resonate - namely, the habitual series of consumption and the instinctual series of destruction and death...It aesthetically reproduces the illusions and mystifications which make up the real essence of this civilisation, in order that Difference may at last be expressed with a force of anger which is itself repetitive and capable of introducing the strangest selection, even if this is only a contradiction here and there - in other words, a freedom for the end of a world.' (Deleuze, 1994 translation p. 382-383).

As focus moved away from Salisbury Plain to the Taw Estuary, it also moved away from large canvases and towards small fragments of paper, rectangles of metal, paper and the OS Explorer map 139. My thinking at the time was about portability – small supports that I could carry with me easily when I walked so that the work could be made or started during my walks, and that my focus could be on the estuary and a slow tuning in, rather than on the logistics of transporting a large and heavy rolled canvas on each walk (often in wind and rain). The OS map of the estuary was a start point on which to make drawings and rubbings

of the textures of the ground. Each panel on the map held an obvious grid reference to the scale of the map's making. The scale and grid that I researched through the first scale mapping exercise of the 18th Century Cassini map of France as explored in the previous chapter, walkers literally measuring out the land through their walking bodies and through the trigonometry of the triangle.



Figure 61: Image of work from the same series as work included in the PhD exhibition: *Trace (abandoned ships register)* rust on Hahnemuhle, 85 x 105cm x 2, 2020.

From the early walks along the Taw, the map and its grid has been a companion. I made small drawings in each grid on the map in my hand, I brought the earthy prints from the metal plates worn under foot together forming more grids (*Ground Texture Recordings*), I formed the rusted plates from the ships and the rust transferred onto paper into grids (*Rust Recordings* and *Trace – abandoned ships*), and the photo-etched plastics were also tested in grid formation (*Ghost Plastics – part one*)⁵⁵. My thinking was to develop a series of maps of the estuary that as I set out in the previous chapter, would (re)map the estuary within a counter cartographical framework, aiming to map aspects that are often overlooked or under-valued; elements that are ephemeral and shifting twice daily with the tides. With this in mind, I worked with grids across each series as a way to bring the temporal records together and to try to open conversations and visual entanglements through mapping, between the repetition and difference explored through the tiny shifts in marks and materiality that could be seen as each rectangle came together over time (see Figure 62 below).



Figure 62: Image of work from the same series as work included in the PhD exhibition: Testing exhibition ideas with the use of the grid, *Rust Recordings* and *Trace (abandoned ships)* both installed in exhibition *1000 days in*, Sion Hill Gallery Space, Bath Spa University, July 2018.

⁵⁵ See Appendix One for details of each process.

In the final year of the project, I tested the work in a single space. It had been brought together before in various group shows and in two solo exhibitions at different stages; *Mapping Place* and *Hold the Line*⁵⁶, but at the time there was less work, and the grids were smaller, with some work forming instead a linear series. I had envisaged that the grid would lay bare the repetition and the small shifts over time within each series. Bringing the work together, the many grids had the unexpected effect that rather than open out conversations and suggest multiple relationships across the strands to communicate a sense of entanglement and interconnectedness, instead the work was closing itself down as a strange sense of uniformity and control was imposed onto the work – my control by an overly ordered aesthetic of the grid. The aesthetic of the grid that seemed to hold me (as a human) on top of the hierarchy – so that the sense of entanglement, of a flat ontology, a horizontal plane to challenge the primacy of human agency was lost or at least partially submerged. This understanding posed some challenges and some questions that included how to bring the work together without an over-reliance on the grid; how to place the unfixed and shifting nature of the work as a central consideration in sharing it; how to form an approach that holds the senses (and not just sight) as part of experiencing the work, and how to foster a connection between the work as a trace of the entangled matter of the Taw, the processes of the making and the Taw itself.

⁵⁶ *Mapping Place* in Contains Art, 2018 and *Hold the Line* in Arcade Cardiff, 2018.

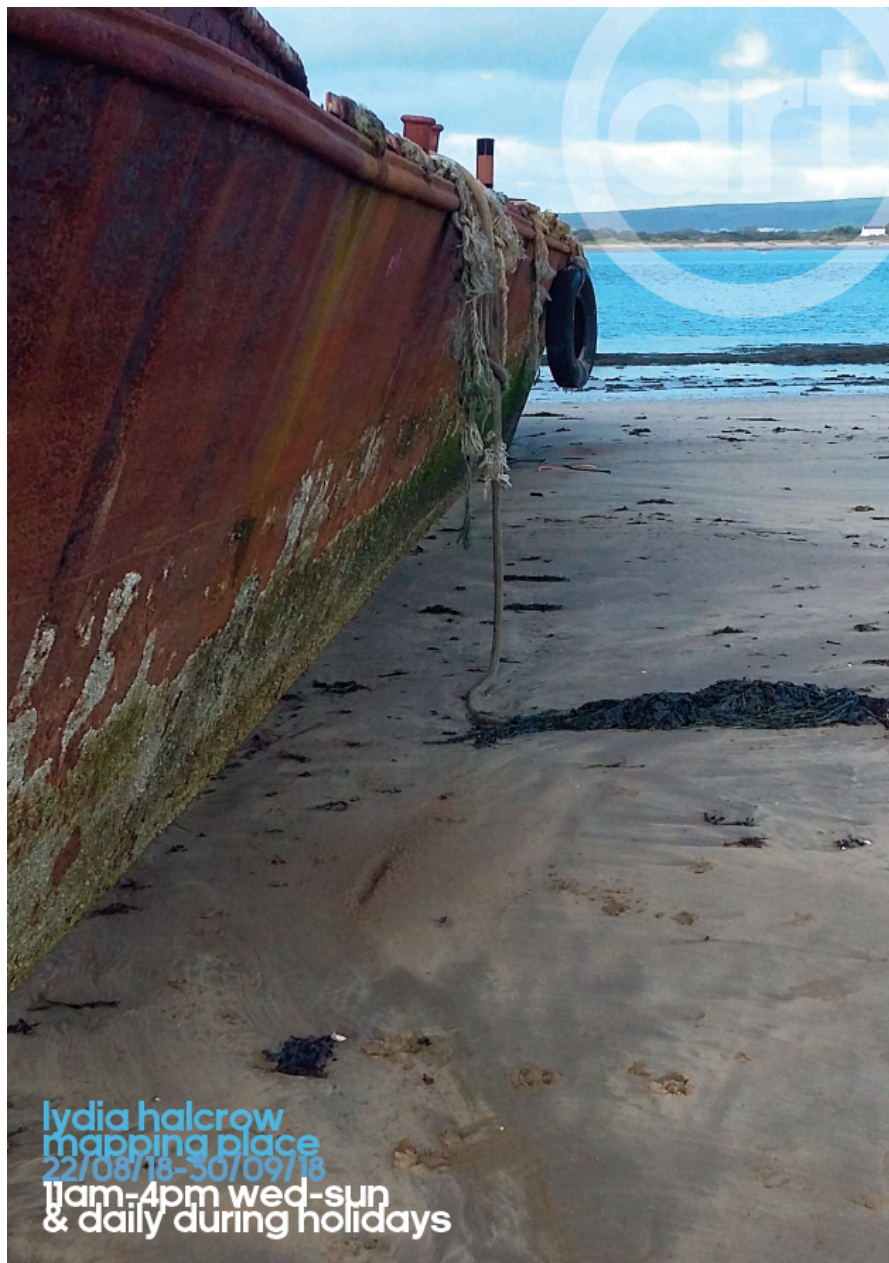


Figure 63: *Mapping Place* exhibition poster, Contains Art, 2018.

The central issue of the grid was that an over-reliance gave a sense of control and fixity that ran counter to the making of the work. This is not to say the grid was wholly problematic, but more that all of the works forming their own grids seemed to close the work off from each other, giving the impression that they were ‘resolved’ and held within a fixed boundary as explored through Barad’s thinking in Chapter Two. This ran counter to opening up the

entangled links and a sense that the work was still evolving as part of a worlding world, which threw up a series of problems to overcome.

The understanding of these issues relating to the grid coincided with the anxiety inducing days, weeks and months of a first UK-wide lockdown because of Covid-19, with many more lockdowns and restrictions to follow. Freedoms once taken for granted vanished overnight. This meant no walks along the estuary and the general disquiet of muted life inside the pandemic. I felt such a sense of disconnection between the work and the estuary that my supervisor suggested I pack everything hung in the studio away to remove the pressure of sitting in the studio space and looking at the work, expecting something from it. So away it went into the long thin drawers of my plans chest, an e-bay buy that came from a decommissioned MOD site – more structures of land ownership and control layered through another object coming into contact with the work. A distant echo of a conversation between the MOD plans chest and the plastic cartridges washed up along the banks of the Taw from MOD firing ranges across the water, also held within the drawers (Figure 64). The matter memory of one thing forming unexpected assemblages with another thing as explored through Bennett's 'vibrant matter' (2010).



Figure 64: Image of work from the same series as work included in the PhD exhibition: packing up work in the studio into the MOD plans chest, March 2020.

As I could no longer get to the estuary to walk, I returned to holding in my hands the matter of the estuary — the plastics, rust and earth collected and housed in jars and bags around the studio. I returned too, to thinking and reading about themes that had been so important in how the project developed; the flux and flow of the estuary, the tides evident in the strandline debris, the entangled nature of my walking body in that (and every) place, the tactile / sensorial experience of making the work.

I thought back to the first of the two solo exhibitions showing this Taw estuary work in *Arcade Cardiff*, a test space where I was encouraged to continuously shift the work around and experiment with how it might be hung and experienced. I realised that there were ideas from that time to attend to, something in the flux and the improvisational approach to how the work was shown. Work was propped, it was moved daily, paper was hung and allowed to curl, rust and earth flaked off surfaces (Figure 65). What emerged was an understanding through the experience of sharing the work in this way that there was something in moving work daily that might link to the tides of the estuary washing in and out and disrupting the matter. Something around the idea of small disruptions that held a link to the slow walking methodology as a way to make strange the place of the Taw and my own walking body. Something too about the repetitive act of moving the work made with the Taw each day, that echoed all of the repetitions of marks made within the work as examined in Chapter Four through Deleuze's *Difference and Repetition* (1994).



Figure 65: Image of work from the same series as work included in the PhD exhibition: *Trace (abandoned ships)* hung allowing paper to curl, rust to crumble, re-ordered during the exhibition (Arcade, Cardiff, 2018 and Contains Art, 2018).

The second exhibition space *Contains Art* is a converted shipping container in the harbour in Watchet, Somerset (Figure 63). There I held walks with local children making texture maps through rubbing textures and collecting stuff along the coast to become mark-making materials to work with, so that touch and matter conversations through making, offered a different experience to the more formal viewing of the gallery space or the reliance of an

explanation in words to frame the work. Refining these things and bringing this work together, I decided that I wanted aspects of the work in an exhibition space to be:

- Evidently in flux (linking to the daily flux of the tides along the Taw in some capacity)
- Touched (to allow fragile bits to flake off through human touch)
- Engaging different senses
- Situated within an exhibition space that I would think of as the inner space of the abandoned ships
- More fluid and improvisational in how it came together in the space (found things to mix with made things, things to be propped, moved around, unframed)
- Responding to the exhibition space – in conversation with the architecture and the estuary simultaneously (the gallery space of the PhD exhibition next to the River Avon as a watery link and conversation to begin).

In relation to modes of thinking about matter, Ingold highlights a model within 'Western thinking' that places matter as passive and inert, stating that his 'ultimate aim, however, is to overthrow the model itself, and to replace it with an ontology that assigns primacy to processes of formation as against their final products, and to flows and transformations of materials as against states of matter.' (2010, p.2). The artistic processes attend to and are entangled within these processes of formation. The works holding traces and residues of estuary matter are not static, but continue to 'flow and transform' (ibid) away from the estuary, through the inherent instability of the matter within the surface. I align this thinking with Barad's understanding that practices of knowing are 'not isolable' nor are they 'outside the world' but situated within and of the world 'as part of...its differential becoming' (2007, p. 185).

This is relevant to sharing the work because I position the work as artistic research, therefore the knowledge is held within the artwork situated as part of the world in ongoing flux. Equally the white cube of the gallery space is still a part of the world. It does not sit outside of it in a pristine environment, the air still mingles with the matter, humidity still

fluctuates, time still passes, bodies still disrupt air currents that are entangled with the work on paper and metal, the earth, rust and plastics. This understanding was central in how I formed approaches to bringing the work together within an exhibition space. The artworld is still a part of the world in 'its differential becoming' (ibid).

The anarchival as a feed-forward mechanism

Brian Massumi's writing about the 'anarchive' in collaboration with others at the SenseLab (2016), became a methodology through which to bring the work together. This is explored further in relation to Springgay and Truman's walking research (2018). Forming connections between ideas relating to 'the anarchive' and the mantra to 'follow the materials' explored in Chapter Two (Lange-Berndt, 2015; Ingold, 2010; Deleuze and Guattari, 2013) fostered an approach to holding the materials and the flux of the materials as a key consideration in how the work came together in the exhibition space. Anarchiving offers a: 'repertory of traces of collaborative research-creation events. The traces are not inert but are carriers of potential. They are reactivatable, and their reactivation helps trigger a new event which continues the creative process from which they came, but in a new iteration.' (SenseLab, 2016). I extend 'collaborative research-creation' through a non-anthropocentric lens, so that the work coming together aimed to hold the collaborations between the human, the more-than-human and the non-human matter of the estuary as a focus. A focus that is evident through the traces within the work that are themselves 'not inert' (ibid) but continue to flake, crumble, rust and bend. The sense of iterations that trigger new creative processes (ibid) is evident within the relationship of the traces in the multiple works that stem from each process. As these traces flake off onto the gallery floor, or are collected onto shelves to be carried forward into pigment to work with over a subsequent set of processes, ideas around the multiplicity and feed-forward nature of the anarchive are embedded within the approach to sharing this artistic research (ibid).

The 'anarchive' and counter-cartographies

Springgay and Truman align walking, anarchiving and counter-cartographical approaches, that hold clear links in terms of how this artistic research has developed and how it might come together to show traces of these complex and interlaced relationships with ideas and matter;

'Walking as 'anarchiving' attends to the undocumented, affective, and fragmented compositions that tell stories about a past that is not past but is the present and an imagined future. As counter cartographies and anarchiving practices the walking projects disrupt dominant narratives of place and futurity, re-mapping Land 'returning it to the landless.'" (2018, p.14).

They go on to say that the 'anarchive' 'is not documentation of a past activity. Rather it is a *feed-forward mechanism* for lines of creative process, under continuing variation.' (ibid, p.100). The work that has emerged through the project, like the rusting metal plates collected from the abandoned ship (*Rust Recordings*), the plates that record the textures under hand and under foot (*Scratching the Surface, Ground Texture Recordings*), the many bags of plastics that line my studio wall embossed into *Ghost Plastics*, all offer a '*feed-forward mechanism* for lines of creative process' (ibid). The work continues to flux through the making as rust fragments crumble off, paper curls, particles of earth shift on the surface. The very earth, plastics and rust collected and made with, in different iterations across the different series of works are a close tuning into and attention to the undocumented materiality of this place and their affect upon the estuary and my body as it walks with(in) this place.

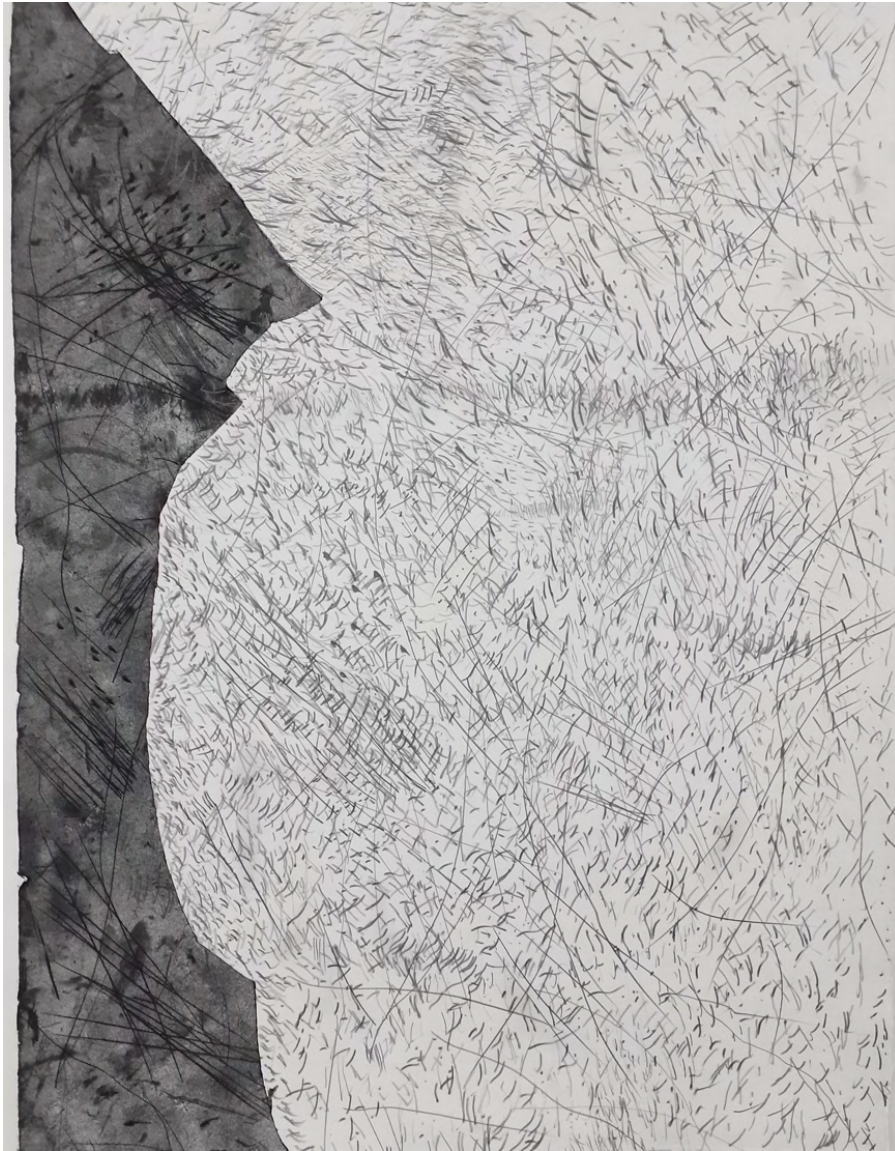


Figure 66: Image of work from the same series as work included in the PhD exhibition: *Conversation*, plastic debris etching with Bideford Black earth and graphite on Somerset, 45 x 65cm, November 2020. A mode of conversation held between the marks formed on a large fragment of plastic washed up on the Taw, inked up with Bideford Black earth and printing oil to form a print, the graphite marks were a way for me to enter into a visual and mark-making conversation with the marks made by tide, time and erosion.

The idea of each work as a fragment of a whole that is shifting, ambiguous and cannot be captured in its entirety has been a central consideration that has emerged through walking/making with the Taw. This echoes my understanding of 'place' as a shifting and complex entity as highlighted in Chapter One through Massey, (2005). In reference to Murphie and the SenseLab (2016), Springgay and Truman state 'anarchives, in contrast with

official archives, are activities that resist mere documentation and interpretation in favour of affective and material processes of production.’ (2018, p.107). Further, they say, ‘unlike an archive concerned with recording, preservation, and coding practices that aid in the retrieval of data, anarchiving means approaching matter from new perspectives that may be incongruent with conventional archiving practices, in order to activate erased, neglected, and hidden histories’ (ibid).

I position this body of work as intentionally approaching matter from new perspectives – the matter of the estuary encountered through many walks over many years. This matter approached through unconventional processes (plates on feet / hands / ships, plastics hammered / pressed) forms records of neglected matter; earthy and debris strewn histories of this place that are encountered in the everyday but that are erased by conventional maps (through being left off) and often left off local records of this place found in heritage signs, local history publications, tourist brochures and websites.⁵⁷ These encounters with the power and vitalism emanating from things in their unpredictable assemblages was explored in Chapters Two and Three in relation to Bennett’s ‘vibrant matter’ (2010). The human stuff and the impact of the human stuff in the everyday; the abandoned industrial structures, the plastic debris, the eroding river banks, the polluted estuary waters; this neglected matter in the now is the hidden history of tomorrow unless it is attended to in the present as a mode of Haraway’s ‘staying with the trouble’ (2016).

The shifting nature of the work and the Taw

In bringing the work together through the lens of the ‘anarchive,’ the fragmentary, complex and shifting nature of the Taw and the collaborative artistic processes, are ‘affective’ and part of an ongoing ‘activation’ (2018, p.14). In this way I wanted to approach methods of sharing the work that placed the visitor as an activator through touch, and to hold the

⁵⁷ In balance to this, a 2015 project with the Burton Gallery aimed to bring a grouping of artists together to examine the local history through the local earth matter Bideford Black: <https://aestheticamagazine.com/review-of-bideford-black-the-next-generation-burton-art-gallery-and-museum-devon/> <http://bidefordblack.blogspot.com/> accessed March 2016.

capacity too through touch for destruction of the work in its erosion and further fragmentation to echo the tides / weather / rising seas along the Taw. This intention also placed the high tide times as an activator through which to shift the work within the space (the collections of plastics and metals would be sifted and re-ordered to coincide with the high tide times each day during the final PhD exhibition). This approach placed the work as a 'feed-forward' with a potential flux through different scales of time and agency to continue to shift both through human touch (hands that bend pages, plastic sorted and re-ordered, sound that loops within the space) and through material touch / entangled agency (rust that continues the decay through moisture levels, rust and earth that flakes off with air currents, paper that curls in humidity).



Figure 67: Image of work from the same series as work included in the PhD exhibition: testing ideas in the studio, bringing together work in flux that continues to crumble and flake *Rust Recordings* and found metal plates from along the Taw (the three large metal plates washed up on *the Black Ground*).

What formed through experimenting with how to bring the work together, through tuning into the minute shifts in the work as it crumbled and curled and through the contextual framework of the 'anarchive' was a set of approaches to bring into the gallery space. These

approaches enabled an engagement with the senses, a sense of fluidity and ongoing reciprocal conversations with the Taw. I began to think of the gallery space as the internal space of the smaller of the two abandoned ships on the estuary, and the work as sitting within that space shaped by the daily shifts in tide and weather.

With this in mind, my aim was that a visitor into the gallery space would experience the same work over two consecutive days. But the work would not remain the same from one day to the next – small fragments of rust and earth would have fallen onto the floor or the shelf beneath, the paper would have curled or buckled slightly, the plastics may have been moved or sorted, the sounds recording along the estuary would have shifted. At first sight everything would appear to be the same, and yet through a gradual and slow tuning in, it might become apparent that things had shifted in the minutiae of the small scale in the everyday, just as it is when walking along the estuary on consecutive days. So too the intra-action of the human to pick up and bend pages causing earth, salt crystals and rust to crack and crumble off – to act as a small reminder of the power that our human actions have in the small scale of the everyday to act with care or destruction, or often a complicated mix of both. As explored in the previous chapter, our human touch is never neutral. This held within it a sense that the human bodies and non-human matter coming into the gallery space formed new entangled intra-actions with the work as another ‘iteration’ (SenseLab, 2016). They became part of the work in the same way that the gallery space too was not neutral but another element in the ongoing entangled intra-actions of matter that form a ‘worlding world’ in Barad’s terms (2007).



Figure 68: Image of work from the same series as work included in the PhD exhibition: studio tests with sifting plastics at the high tide times along the Taw – changing and moving plastics projected within a space.

Thinking through the ongoing research-creation of the ‘anarchive’, as a flux and feed-forward mechanism, I decided to take the work back to the abandoned ships so that they would become the ‘exhibition space’. The intention was that the work on paper would be hung with magnets onto the ships to enter back into material conversations with the estuary and the tides in particular through a tidal sequence. My aim was to bring together a series of walks to coincide with this, working with others to collect all of the plastic debris along the stretch of the Taw by the ships, and to make these collected plastics into mark-making tools for collaborative workshops. This was scheduled in collaboration with the Burton Gallery (on the other side of the estuary in Bideford) for 2020, but fell in the first UK lockdown, so could not go ahead. This was therefore unrealised, but is now planned to go ahead in spring 2022 again in collaboration with the Burton Gallery in Bideford, and again to take the form of an outside exhibition with work on paper attached to the abandoned ships

where much of the work was made, with a series of walks to collect plastic debris and make with these foraged materials. A test hang of some of the *Ghost Plastics* work happened in August 2021 and an image of this is included in the exhibition reflections section within Appendix Four. This approach forms part of my ongoing research to further develop this project as an anarchival way to ‘re-activate’ the material traces on the work and begin ‘new iterations’ (SenseLab, 2016).



Figure 69: Image of work in progress along the Taw: making a rubbing of the ship's hull to record the textures, May 2016. This led to the idea to ‘hang’ work on the ships as an outdoor exhibition and ‘re-activation’ of the work through human and more-than-human intra-actions. This was planned for 2020 but cancelled due to Covid restrictions, this is now scheduled for spring 2022, after the timeframe for the PhD.

Claire Roussel positions anarchiving activities as holding ‘an opening, a risk, a vulnerability to possibility’ through which ‘the separate self disintegrates. Who are we outside of these relations?’ she asks. ‘We simply cease to be’ is the answer (SenseLab *The Go-To How To Book of Anarchiving* 2016). This ‘ceasing to be’ I link to an understanding explored through Barad (2007) that my walking body is not a bounded entity within a place, it becomes part of the Taw and the Taw becomes part of me. Csenge Kolozsvári and Mayra Morales explore in the *Anarchiving Manual for Beginners* (2016), the feeling you feel when you enter into a room and something has happened there before that you didn’t witness – but the energy or

sense that the action of the thing unwitnessed remains, just as the metal plates attached to the abandoned ships along the Taw witness the entangled material intra-actions with the passing storms when I am away from the estuary. Kolozsvári and Morales position the 'anarchive' as holding the possibility to engage with and forge new ways of thinking/being/doing/existing through a 'crafting of stories'. Stories that again hold a connection to Haraway's speculative fictions as stories that make worlds (2016), that I align with the *matter maps* as textural/material stories of difference *through* stories of the overlooked matter of the Taw.

Through the combination of material entanglements along the Taw, and the diffractive contextual points of walking (slowly) as a methodology, the resulting work as a counter-cartographical series of textural / *matter maps* operate within an iterative and non-static artistic research. This research offers other matters to think matters with, different ties and descriptions through which to make worlds and (material) stories about (material) worlds (Haraway, 2016).

Through the anarchive, and close attunement, a space emerges to attend to the subtle shifts and the overlooked, multiple readings to form about place, in a place, of a place, made with a place. These tangled readings are with the many voices (human and other) in many registers evident through the lens of the anarchive. The anarchive brings the work together in ways that allows for the affective and the open-ended multiplicity of possibilities. These possibilities will continue to emerge and shift long after the last visitor has gone home and the work is packed away to quietly continue to flake, crumble and rust, mattering with other matter in the dark.

Chapter five conclusion:

In conclusion, I return to the questions raised in the introduction that have been addressed within this chapter:

- How to bring the work together without an over-reliance on the grid?

The chapter examined other approaches that held more of an improvisational quality to them, to reflect the making along the Taw. Attending to the learning from exhibitions of the research at earlier stages was important in understanding how to bring the senses into how the work is experienced and to allow movement within the work to reflect the tides sifting plastics and earth daily along the estuary.

- How to place the unfixed and shifting nature of the work as a central consideration in terms of how it is shown?

Using simple methods to hang or place the work so that it is not framed, but allowed to bend, curl and flake off over time as it intra-acts with air and moisture is central to how the work has come together.

- How to form an approach that holds the senses (and not just sight) as part of how the work is experienced?

As explored in Chapter Four I have tried not to control the outcome of the work, but instead placed *making with* the matter of the Taw as my main approach. Considering this in sharing the work in the final PhD exhibition it will include allowing visitors to handle some of the work and collected matter from the Taw so that the audience is part of the process eroding the Taw earth held in the work through touch. This was explored in relation to human touch in our places as holding an often destructive quality to it. For the PhD exhibition the intention is that the sound samples and the smell of collected plastics will engage the senses within the exhibition space. There is a further planned 'exhibition' that will involve taking work back to the Taw to attach to the abandoned ships (this was cancelled within the timeframe of the PhD due to Covid restrictions and is now planned for spring 2022). The intention of this approach is to engage the work in direct conversations with the estuary, weather, time and its vibrant matter as an anarchival 'feed-forward' mechanism.

- How to foster a connection between the work as a trace of the entangled matter of the Taw, the processes of the making and the Taw itself?

Bringing together *all* of the material aspects to the making into the exhibition space aims to point towards the complex and ongoing material intra-actions. In this way, collected plastics mingle with the plastic residues held within paper through earth and river-water. The metal plates mingle with the earth prints through *Ground Texture Recordings*. The rust and earth matter mingle together. This aims to form further material assemblages that continue to form unpredictable entangled vibrant outcomes in the space of the exhibition (Bennett, 2010).

- How were these approaches contextualised?

Barad's notions of entanglement and intra-actions were again significant in terms of *how* the work might come together to show these material connections. The chapter examined this thinking in relation to the 'feed forward' mechanism of the 'anarchive' as an approach that I positioned as a non-anthropocentric research creation through the entangled encounters with the matter of the Taw. In this way, the work in an exhibition space would shift gradually through its own un-fixed processes of erosion, and also through small interventions I would make, moving and sifting work at the point of the high tides along the Taw, to form a temporal connection with the place of the estuary within the exhibition space.

Chapter Six: Conclusion and new knowledge



Figure 70: Observation image: looking on to the rusting barge at high tide, November 2020 (credit Al Halcrow).

Extract from field notes January 2020:

Her memory like her hearing now fails her, in the tropical heat of her home our confused conversations circle possible versions of this place, multiple identities of who we are, who we were, who we might be, we stumble around dates and epochs, stories alternate between the ever fantastical and the mundane – their veracity equally questionable. Chapels buried under the sand, tunnels beneath the silt, downed German airforce planes, tea-dances, first loves, small flirtations. I never come often enough, I never stay long enough, the possibility of not being known, or worse of a hostile reception hovers off stage... 'and who are you dear?' Then the fog clears and she looks into the insides of me, flattening layers and blowing away smokescreens, with her blue eyes shining she says 'ah yes, you've always loved that place haven't you?'

'Space, time, and matter are intra-actively produced in the ongoing differential articulation of the world. Time is not a succession of evenly spaced intervals available as a referent for all bodies and space is not a collection of pre-existing points set out as a container for matter to inhabit... There is a vitality to intra-

activity, a liveliness, not in the sense of a new form of vitalism, but rather in terms of a new sense of aliveness.’ (Barad, 2007, p. 234-5).

This research was developed through slow and disrupted walking as a methodology for tuning into the material entanglements along the Taw. This embodied methodology formed an approach that was sensorial, improvisational and sometimes playful, as a way to develop a series of artistic processes in collaboration with the estuary and its vibrant matter.

This mode of being disrupted my experience of a familiar place by attaching experimental mark-making/recording apparatus onto both my body and the abandoned industrial structures that line the Taw. The processes to slow me down and disrupt my walking rhythm, led to a gradual sensorial attunement to the tiny shifts in entangled matter over the course of the research. Walking also enabled a gradual forming, sifting and reforming of a series of research questions and possible approaches. Through the research I understood this as *walking as thinking* and *walking as making*.

Walking as a methodology was explored in relation to Springgay and Truman’s walking research (2018), Solnit (2006) and Abrams’s (1997) writing in relation to slow and embodied approaches to foster a heightened connection with places. The written element of the project contextualised and theorised the artistic research within a trans-disciplinary mode of ‘reading through’, within an agential realist, diffractive methodology (Barad, 2007). This reading through explored this artistic research through place inquiry, anthropology, cultural geography, quantum philosophy-physics, eco-philosophy, phenomenology, feminist phenomenology, walking methodologies, counter-cartographies and research creation through the anarchive. The aim of this approach was to place a diffractive ‘reading through’ of different disciplines as a way to notice and attend to the small differences held within this research, rather than use the lens of reflection or reflexivity as a mirror to hold up to the project that Barad (2007) and Haraway (2012) highlight as potentially a mode of sameness.

The written context went on to examine the significant points within the project that led to a shift in approach. A significant change occurred through walking within pregnancy as an

enforced slowing and making strange of my body. This making strange / slow embodiment led to the development of the first artistic process *Ground Texture Recordings* that was influential in shaping how the other processes were formed in collaboration with the Taw. Through a close engagement with the matter of the estuary and through Barad's writing in relation to ideas of entanglement and material intra-actions through an agential realist approach (2007), the project developed away from an anthropocentric lens, towards a post-humanist approach that held the flat ontology of the human, more-than-human and non-human as equal actors (Morton, 2018).

These equal actors, their agency and their 'thing-power' were examined through Bennett's 'vibrant matter' and the discovery of unexpected material assemblages along the Taw (2010). Traces of the 'thing-power' emanating from these assemblages are held as residues on and within the work. The project took up Ingold's invitation to 'follow the materials' (2010) that I extended to Bennett's 'speaking a word for vibrant matter' (2010, p.xiii). The sense of wonder that emerged through this close material engagement is evident in the unexpected outcomes left to curl and flake off paper and metal in ongoing unlikely assemblages with earth, air, moisture, debris, pressure, and many other actants.

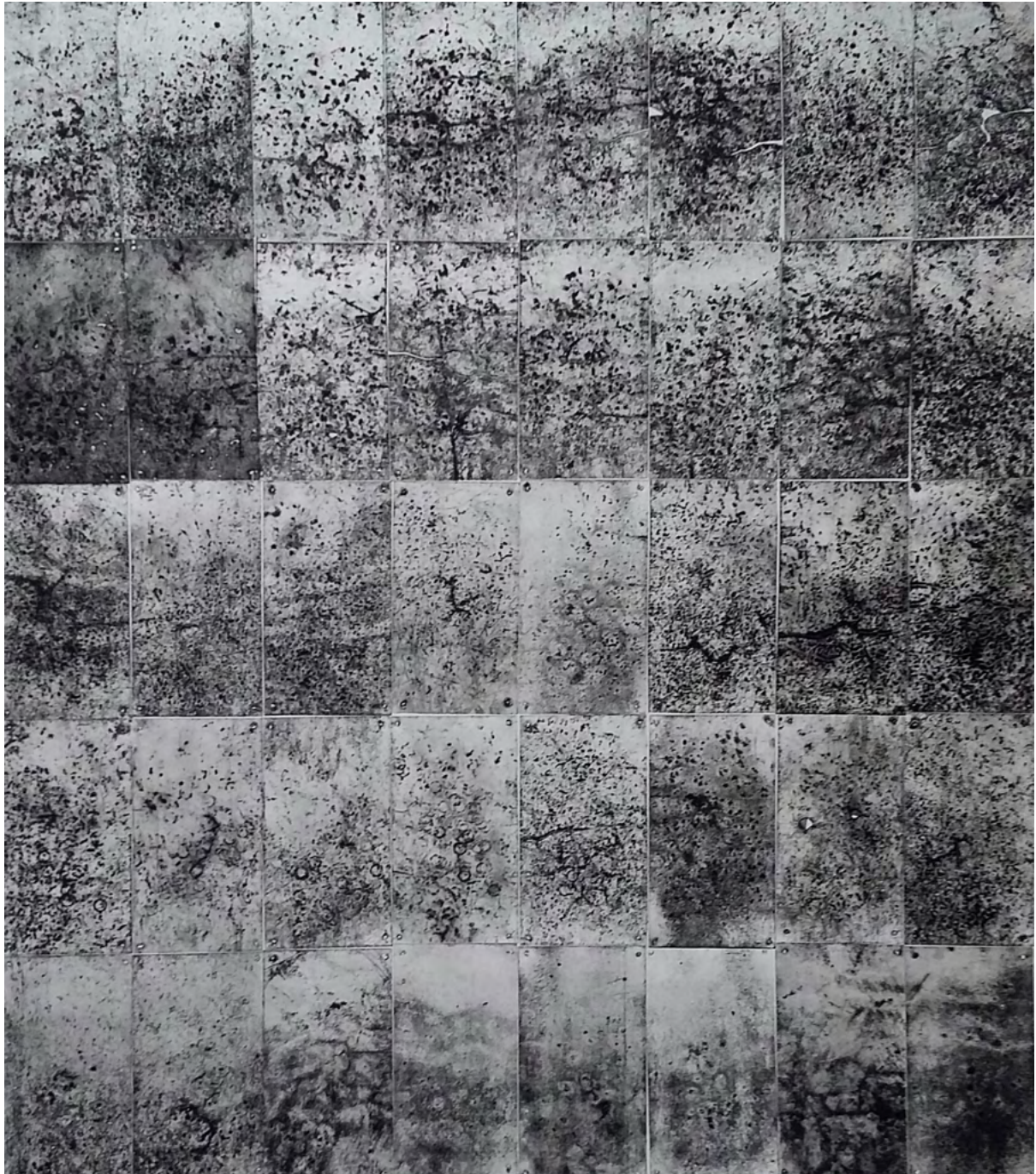


Figure 71: Image of work from the same series as work included in the PhD exhibition: *Ground Texture Recordings (October 2018 a month of walks along the Taw)* Bideford Black on Somerset, 35 x 60cm each, working with the assemblage of earth, textures, metal plates, my walking body, gravity, motion, resistance and time.

The research also examined the personal nature of the inquiry, again through Barad's agential realist framework (2007). The personal nature of the researcher was positioned as one phenomena entangled amidst the measuring apparatus. The artistic processes have

been positioned as an experimental artistic interpretation of Barad's 'measuring apparatus.' They are a series of new experimental methods developed *with* place in order to closely examine place *through* my human entanglements with other matter. Acknowledging the 'measuring apparatus' in the form of the artistic processes as entangled within the research and shaping the outcomes was highlighted as a *more* objective rather than a subjective research approach, again through Barad's writing about quantum experiments (ibid) that was applied here to artistic research. The processes led to the emergent understanding that my body and the Taw have a porous and entangled relationship that is un-bounded. These complex relationships hold a trace of material / textural residues within the resulting works that hint at the complexity, multiplicity and flux as a definition of 'place' (Massey, 2005).

The processes were developed within a counter-cartographical approach (2018, Springgay and Truman), and offer maps of the estuary, that I named *matter maps*. The *matter maps* were formed through repeated walking as a method to 're-map' the Taw as examined in Chapter Four. This was explored in relation to Deleuze's *Difference and Repetition* (1994) that placed the walks, the action of walking, the repeated processes and the marks held within the artworks as a form of 'open repetition' of the 'A B' variety (as examined in Chapter Three). This approach coupled with a diffractive methodology (Barad, 2007; Haraway, 2012) enabled a close tuning into the small shifts and differences emerging within the estuary through the work (as *matter maps*). This was explored with a close examination of the knowledge formed through *Rust Recordings*, *Ground Texture Recordings* and *Ghost Plastics*, within the text (with other processes outlined in detail within Appendix One). As such the *matter maps* in relation to counter-cartographies enter into different material conversations with one another to tell matter stories through a close attention to tiny differences along the Taw and to the more-than-human and non-human worlds constantly worlding. This was explored as an artistic mode of Haraway's 'staying with the trouble' (2016) through extended material and sensorial 'conversations' with more-than-human and non-human worlds. The *matter maps* open out different ways to tell Haraway's 'stories' about the place of the Taw, stories told through different registers, enabling 'different kinds of knowledge-making practices' (Barad, 2007, p.90). These matter stories told through the maps are stories knotted through entangled intra-actions with the matter of the estuary.

The research found *Ground Texture Recordings* and *Scratching the Surface* amidst the other work to be ‘different kinds of knowledge-making practices’ (ibid) emergent through blurring the boundary between touch of hands/feet and the things touched, gravitational pull, resistance, kinetic energy and matter forming processes that generate a hybrid human/non-human/natural/cultural/knower and unknown assembled thing. This was understood to be a hybrid of Barad and Bennett’s thinking (2007, 2010). The residues of this assembled thing are held within the resulting work. The extracts of autobiographical writing offered another voice in relation to both memory and to the personal nature of the research project and the many facets that formed it through an auto-ethnographical approach (Pink 2015). In this way my grandmother’s stories and my own stories about the Taw were woven into the text as another voice, holding other memories that framed the research.

Deleuze’s writing about the self, holding ‘thousands of little witnesses which contemplate within us’ and the ‘thousand intertwinings’ explored in Chapter Three (1994, p.100 & 102) is significant to both the research and to the title of the project. This thinking was positioned as an extended notion of witnesses that are human, more-than-human and non-human. Witnesses were explored as memories and as matter that hold ‘intertwined’ relationships within the material entanglements that make up a place and frame our human experiences of a place. The idea of the ‘modest witness’ was examined in relation to Haraway (1997, 2016), so that through the research, the work witnesses the Taw, my human body within it, and the ongoing human impact on this place through the unfolding climate crisis. Simultaneously, my walking body has acted as a ‘modest witness’ to the environmental degradation in the scale of the Taw and through the time of the research. The ‘modest witness’ within the research, is an expanded, sensorial and reciprocal process, not rooted in sight alone, but in all of the senses and material conversations. It is an ongoing witnessing within this and every place that from a human perspective, necessitates a close tuning into the material vibrations through the senses. The ideas relating to human, more-than-human and non-human witnesses and the ‘thousand intertwinings’ (Deleuze, 1994, p102) that form the research are referred to within the research title. The title refers to a mode of thinking / being and Haraway’s ‘worlding’ or entangled ‘becoming with’ in the context of the walking/making with(in) the Taw (2016).

In relation to re-mapping, the writing highlighted the sensorial approach that through the research placed touch as the most significant sense in how the research developed and the *matter maps* formed. Touch was explored as reciprocal and holding the possibility of fostering a greater sense of care for the estuary through Puig de la Bellacasa's notions of care and reciprocity (2017) and through Barad's ethico-onto-epistemology (2007). Touch, slowing and careful tuning in, were all modes of being that aimed to hold a sense of Haraway's 'respons-ability' as a way to 'stay with the trouble' (2016) and tune into the more-than-human and the non-human (a mode that extended to a growing awareness of the impact of the materials used within each process).



Figure 72: Image of work in progress along the Taw: removing *Rust Recordings* from the smaller of the two abandoned ships and leaving a rust residue to form *Trace (abandoned ships)*, 2018.

The 'anarchive' (2016) as a mechanism that creates knowledge through artwork / processes that are 'live', 'feed-forward', in flux, and enable other encounters to shape the paths taken (SenseLab, 2016) offered a way to explore ideas around sharing the research. I placed an extended understanding of the anarchive as a non-anthropocentric approach that held the flux of collaboration with the human, more-than-human and non-human as a method to bring the work together. In practical terms this meant allowing the traces of material entanglements along the Taw that are held within the works to continue to shift, flake off, curl, bend and intra-act with new matter within an exhibition context. This allowed human visitors to touch some of the works (in the shape of fragile, earth encrusted artist's books), a

sensorial approach that placed sight, touch, smell and sound within a space that aimed to foster a physicality in the experience of the work (the need to bend down, walk, look closely, look into, slowly tune into the small shifts in matter). Ideas emerged that challenged what an exhibition space could be, with the intention⁵⁸ to take the work back to the estuary and collaborate with the abandoned ships as a place to share the work and 're-activate' the traces to generate 'new iterations' (SenseLab, 2016).



Figure 73: Image of work included in the PhD exhibition: *Rust Recordings* (2018) rust on mild steel off cut 22 x 10cm. Attending to the small shifts in rust and other matter collected on and within the surface of one of the rust recording plates positioned on the smaller of the two abandoned ships along the Taw estuary. These plates become 're-activated' when placed back on the ship to respond to and with the weather conditions along the Taw, 2018.

This approach held too, a sense of the tidal shift within the Taw as a central factor in how the project and intra-actions with matter were formed (and how the estuary is shaped and

⁵⁸ This approach was to take the work back to the Taw to attach it to the abandoned ships to form an outside 'exhibition' that included walks with other people and collaborative making with collected plastics. This was scheduled for 2020 as part of the Burton Gallery's programme but was cancelled due to Covid-19 restrictions. It is now re-scheduled for Spring 2022. For a test image of this idea please see Appendix Four final image on page 221.

re-shaped daily). Bringing this into the exhibition space, I aimed to move small aspects of work and debris collected over the six years to coincide with the high tide times along the Taw every day⁵⁹. This aimed to foster a connection through time, tide and space between the exhibition space and the place of the estuary, again through the lens of the anarchic not as static, but instead in flux (SenseLab 2016). The 'reactivation' planned⁶⁰ through taking the work back to the Taw, through an open air exhibition of work attached to the abandoned ships, would also hinge around the tides – with the high tide washing clean some of the traces held within the work attached to the ships. This speculative approach would begin again the matter conversations between the work and the estuary as an ongoing and open-ended mode of flux so that the traces are not 'inert' but activated (SenseLab 2016).



Figure 74: Image of work included in the PhD exhibition: detail of *Scratching the Surface* (2018). A record of the changing textures of the hulls of the two abandoned ships along the Taw experiencing decay and oxidation through tides and weather.

⁵⁹ This activity was undertaken daily during the PhD exhibition, for writing to explain this to visitors and images of the shifting work see Appendix Four.

⁶⁰ Planned for 2020 but cancelled due to Covid restrictions, now planned for Spring 2022. For an image of a test of this plan see final image in Appendix Four, page 221.

Shifts in thinking through making – through the lens of the anarchival

In bringing the work together through the lens of the anarchival, the gradual shifts in thinking through making and making through thinking that had emerged over the course of the research became more apparent. These shifts were often subtle, so I decided to place them in a simple table to compare my thinking at the start of the project to the ways of working that have emerged at the end of the project (or rather at the point of writing – as the project and the work is shifting still and just like the place of the estuary will continue to flux, tangle and emerge).

| Start of Research Project | End of Research Project |
|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Walking in a place | Walking <i>with</i> a place, human trace, more-than-human worlds and non-human matter |
| Making about a place / in response to | Making <i>with</i> a place / in collaboration with |
| Making through my human walking body to capture and convey a sense of place | Making with human and more-than-human, organic and inorganic things in a place through tangled, slow and repeated encounters over many years |
| Making a series of paintings using layers and symbols collected from a place | Making with the materials in and of the place, allowing the materials to inform the outcome and the process and materiality of the making |
| Making a painting that has a fixed / stable surface (in material terms) | Making a work as a <i>matter map</i> of the Taw <i>through</i> a process of movement that continues to shift and flux after its making (as materials flake, curl, bend and crumble) |
| Practice-based research, situated within Fine Art, specifically within painting | Artistic research that is trans-disciplinary and reads through other disciplines to generate its own <i>assemblage-practice</i> to work <i>with</i> place |

New Knowledge

The new knowledge generated through the research is a series of processes formed with the Taw over six years as a counter-cartographical mode of close tuning into the more-than-human / non-human worlds of the estuary through slow walking. The processes form new embodied methods of re-mapping a place with particular focus on its materiality and textures. This generates a series of *matter maps*. This approach can be taken forwards and extended by other researchers as an approach that attends to a close tuning into the matter of 'place'.

The knowledge that is held within the *matter maps* that emerge through these collaborative processes are complex traces of the many entangled intra-actions with the materiality of the Taw. The *matter maps* of the estuary place the personal embodied trace of the researcher, the materials selected to record the Taw, and the outcomes of these recordings as entangled together with porous boundaries. The traces within the *matter maps*, hold a series of inter-connected records of the unpredictable agency each material enacts upon the other in unlikely assemblages that are human, more-than-human and non-human, with outcomes that hold forth the vibrancy of material intra-actions within the estuary that has been explored throughout this writing through Barad, Bennett and Haraway's thinking in particular (2007, 2010, 2016).

The *matter maps* offer records of the often-overlooked materials of the Taw, in the form of eroded earth, abandoned industrial structures, more-than-human worlds, human trace through plastic and other debris. As an ongoing series the *matter maps* attend to the tiny differences that emerge through repeating the same processes again and again, to allow a diffractive close attention to the small shifts in matter along the Taw. In archival terms, the *matter maps* are reactivatable through 'affective and material processes' that 'activate erased, neglected and hidden histories' of the industrial debris littering the estuary, the pollution in the water and on the banks of the Taw (Springgay and Truman, 2018, p107).

The new knowledge recognises that the *matter maps* are entangled together in a reciprocal relationship. To untangle one from the other risks breaking this relationship; the knowledge

rests within the material / textural conversations between the artworks and the processes of their making.

The approach in writing about this project applied a diffractive methodology through Barad's agential realist framework to artistic research (2007). In this way, forming a new application that positions a 'reading through' of scientific findings, eco-philosophy, anthropology, cultural geography amidst other disciplines into an artistic approach to place inquiry. Through Barad, the processes were positioned as experimental measuring apparatus. This is a new artistic application of her theories relating to quantum measuring apparatus (2007).

Application of new knowledge

The knowledge generated through this way of working can be taken to other places as an approach to be shaped in collaboration with each place to form a series of *matter maps*. These *matter maps* would hold a record of a close engagement with the entangled intra-actions of particular matter specific to the particular place over a period of time. The processes formed in collaboration with the Taw would be approaches as a jumping off point to form new collaborative processes to tune into another place made *with another place*. The *matter maps* of the Taw form an earthy / debris record at a point in time when climatic tipping points are unfolding with serious and ongoing consequences for all places and ecosystems, coastal places in particular becoming lost under rising sea levels now and in the near future. The *matter maps* offer approaches that can generate different records that attend to the differences specific to each place – records of the *now* as we approach rapid human-induced climate changes that may alter our places beyond human and more-than-human recognition. The action of *doing* the processes, alone and in collaboration with other humans holds the capacity to generate a slow tuning into a place, to the matter, to the differences, to the biodiversity held within each place and to understand the impact of human behaviour in the scale of the everyday. The *doing* also holds the possibility of opening up conversations *through* making so that the processes as *actions* become a way to

cope with the weight of daily news of environmental degradation – a coping through doing, a coming together.

The ‘what’ of the knowing is held within the *matter maps* of the estuary that attend to the material encounters in all their ‘vibrancy’ (Bennett, 2010). The ‘how’ of the knowing is positioned within the series of artistic processes developed in collaboration with the estuary. These offer material maps as a record of the Taw before sea levels and more frequent storms cover the low lying land and erode the 350 million-year-old earth held within the river cliffs, washing it out to sea. The maps are a way for future people exploring this place to examine its materiality, the trace of human debris, its vibrancy at a particular point in time held within these fragile, earthy records.

The artistic research positions the *what* and the *how* of knowledge generated as entangled with modes of ethics, care and responsibility in a way that, as examined through Barad’s writing (2007), cannot be set apart. As such, the artistic research is formed through an ethico-onto-epistemology (ibid) generated through collaborative and sensorial approaches to tuning into human, more-than-human and non-human worlds within a particular place. This approach to place inquiry aligns the way of making (slowly, carefully, respectfully) with the materials of the making (collected from the estuary, cleaning the beaches of harmful debris, using small quantities of earth and local paper) as a low impact way of responding *with*, that develops knowledge through ethical modes of creative practice. This approach can be fostered by other creative practitioners to minimise the impact of research on the place being researched.

The approaches set out through this artistic research may be of interest to anyone researching place through the unfolding climate emergency, particularly anyone interested in employing transdisciplinary, creative approaches to place inquiry. With a diffractive methodology in mind, I do not want to stipulate disciplines here, but rather leave the disciplinary application open ended. Focusing instead on any researchers exploring the entanglement between human, more-than-human and non-human matter within places in ways that hold an awareness of the complex meeting points between memory, human trace, the context of the climate crisis and other material entanglements. This approach is

personal but simultaneously aims to be non-anthropocentric in the artistic methods to generating knowledge. Adopting low-fi and playful embodied artistic approaches to investigating place aims to open up accessible methods which are open to all ages and all groups situated within and outside of an academic environment.

*

Afterword:

My grandmother died in the final stages of the project at the incredible age of 103. My experience of the estuary is and was, as I have written in this text, entangled amidst my experience of her life and her memories. This experience was in turn entangled amidst my growing understanding of what a temperature rise of close to 4 degrees might mean for all of us (human, more-than-human and non-human) as we exist through what many scientists refer to as this sixth major extinction. My grandmother spent the last year of her life more or less locked inside a care home as Covid raged and her family were unable to visit. In her final days touch was denied, phone calls were made to tune into the last rasps of breath, these memories, this lack of touch is now entangled amidst the touch of the matter in the artwork, a map of last days mattering amidst this place.

The project is open ended and the processes will continue, but as I write this, my last walk along the estuary was on the day of her funeral. A February day so windy I was blown down the beach towards the abandoned ships. There I collected the rusted plates left for the longest time of three months because of lockdown restrictions. One plate was missing, the ship had listed and someone had tied more rope from ship to jetty using one of the rusting railings that I had tied the metal plates to. The pressure of storms and high tides had broken the end of the rail, so that the last plate had slipped off and dropped down into the flooded inner section of the container ship. I could see the plate resting at the bottom of the water. I could not reach it. Bringing these plates together, pressing them into wet paper to leave a

residue of rust and insect prints, cobwebs and seeds, there was the empty space of one plate missing. We look for signs in life at moments of significance, and the sign of the empty space held a clear and very personal poignancy that is expressed in the complex meeting points of matter within the artwork more than I am able to express through words. The work holds an emotional trace amidst the material traces, the residues of lives and matter held within fragile surfaces left to flake off, bend and curl as the world continues to world.



Figure 75: Observation image: the smaller abandoned ship on one of the highest tides of the year, the boat is slowly buckling in on itself through decay, while birds have started to nest within the mast on the deck of the ship, November 2020.

Appendix One:

Artistic Processes and related artworks

See also video made for Burton Gallery that shows a section of a Taw walk collecting plastics and making *Ground Texture Recordings*: <https://www.youtube.com/watch?v=oCruvAJdIWA>
The following are each series examined through the processes and materials of their making. As identified within this writing, there are no hard boundaries between the processes of the making and the artworks, they hold blurred and closely interconnected relationships. Within the PhD exhibition artworks as *matter maps* were shown alongside the materials of their making with no boundary or distinction, so that the processes, materials and traces on paper and metal come together to form *matter maps* as temporal records of the Taw Estuary over a 7 year period.

1. *Ground Texture Recordings* (2015 – 2021)

Materials:

- Aluminium plates 15.5 x 8.5cm
- Awl tool to make 4 small holes near each corner
- Gardening wire
- Walking shoes and walking body

What:

- Plates are attached to walking boots using a piece of gardening wire threaded through a small hole punctured into each corner of the aluminium plate and twisted to secure, then around the holes where laces thread on the walking boot and again twisted to secure. The gardening wire is reused for subsequent plates.
- Plates are attached shining side facing the ground.
- These are worn as part of the walking shoes on each estuary walk.
- After the walk they are removed, gardening wire is twisted off to be re-used for the next set of plates.
- The plates are washed if sandy
- Handfuls of collected estuary earth is dried and ground in a pestle and mortar, sifted through a fine sieve and mixed with printing oil to make a printing ink
- Plates are inked up and treated as drypoint etching plates to create an etched record onto paper of the textures of the ground in contact with the walking shoe / walking body.

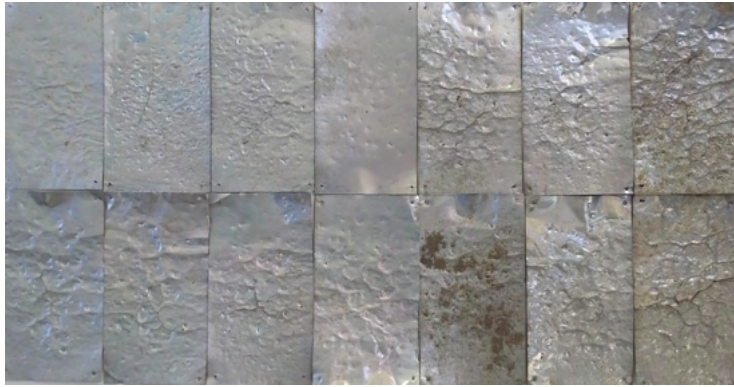


Figure a1. Image of work included in the PhD exhibition: *Ground Texture Recordings* a collection of metal plates.



Figure a2. Image of work included in the PhD exhibition: *Ground Texture Recordings* transfer of marks made onto two plates using ink made from collected earth pigment Bideford Black.

2. *Scratching the Surface (abandoned ships)* (2018 – 2021)

Materials:

- Aluminium plates 15.5 x 8.5cm
- Hands

What:

- An aluminium plate is held in my left hand with palm against the back of the plate and shiny side facing the ship's hull
- My right hand holds the front of the plate slightly away from the hull to prevent it from getting stuck on the textures and to allow it pass along the ship

- I walk slowly along the length of the right hand hull starting at the highest point I can reach and aiming to keep a straight line all the way along the hull from stern to bow
- At the bow I put the plate in my bag and change for a new plate that I hold in the same hand
- I walk back along the same side of the hull from bow to stern this time and moving one plate lower on the hull
- I repeat this until I am crawling along the sand at the lowest point of the hull where it meets the sand / silt below
- I then begin this process but this time with my right hand holding the plate, left hand keeping the front of the plate just off the surface, and this time walking along the left side of the hull from stern to bow, then swapping for a new plate to return from bow to stern. Again, working from my highest reach to the bottom of the hull where it meets the sand / silt
- These are treated like drypoint etching plates as above and printed with handmade ink made from rust pigment



Figure a3. Image of work included in the PhD exhibition: *Scratching the Surface (abandoned ships)*.

3. *Rust Recordings (Abandoned Ships)* (2017 – 2021)

Materials:

- Mild Steel plates (usually offcuts) 10cm x 30cm with a 0.5cm hole cut in the middle top
- Gardening wire (initial tests with cable ties)

What:

- Ten plates are attached onto the hull of the abandoned barge at the point where there is a rusting railing above the cargo section
- The plates are left for intervals, at the start of the project this was once every 6 weeks
- Later in the project the intervals became random because of Covid lockdown restrictions, so that later plates were left for 3 months
- These are laid out on damp Somerset paper with a second sheet on top of the plates. They are left either with weights on top or passed through the printing press and left again with weight on top for a trace or transfer of the rust residue to embed into the paper



Figure a4: Image of work in progress along the Taw: collecting metal plates after one month on the smaller abandoned ship along the Taw.



Figure a5: Image of work included in the PhD exhibition: *Trace (abandoned ships)* – Installation image of rust transfer onto Somerset, with shelves to catch the flaking rust.

4. *Ghost Plastics* (2018 – 2021)

Materials:

- Collected beach plastics from the banks of the river Taw between Instow beach and Fremington Quay

What:

- All plastics collected as I pass along each walk along the Taw (on the coastal section this is following the strandline or hightide line)
- At each point where I see plastics, I collect them in a bag, where the plastics are fishing twine they are often tangled within bundles of seaweed, so I spend time untangling each piece of plastic twine or fishing net, so that the seaweed is left intact on the beach
- The plastics I carry back with me
- These go through a range of processes (after initial tests with cyanotype and soft ground etching)
- The first (Figure a5) is to lay them on light-sensitive etching plates and place them in a UV lightbox to 'expose' the plate so that the plastics form a shadow on the plate where they are in contact with the plate. This forms a rough surface which holds printing ink and leaves an impression. For these I mix Bideford Black ground pigment with French black printing ink to make a hybrid ink (this is because pure Bideford Black seems to scratch the plates as it is less fine despite the sifting processes)
- The second process (Figure a6) is to sandwich Somerset paper with carbon transfer paper (carbon side in contact with the Somerset) with the plastics placed on top of the carbon paper, with another sheet of carbon paper and Somerset placed on top (again carbon is in direct contact with the Somerset paper). These plastic fragments and fishing twine are then hammered using a domestic hammer
- The third (Figure a7) is to place the plastic twine collected onto Somerset paper with a sheet of Carbon transfer paper (carbon side facing the paper) so that the plastics are on top of the carbon paper. Above the plastics another sheet of carbon paper is placed with another sheet of Somerset paper above (in both cases the carbon side of the transfer paper is in direct contact with the Somerset paper). These are pressed down using a roller or a printing press
- The fourth process (Figure a8) is to soak the plastic twine in a mixture made from river water and ground down Bideford Black earth collected from the river bank. The soaked plastics are placed between two sheets of Somerset paper and pressure is applied using a roller (whilst still wet)
- The fifth process (Figure a9) is to sandwich plastics soaked in earth and river water that have been left to dry, to then run through the printing press (or rub to apply pressure) so that the earth transfers onto the paper

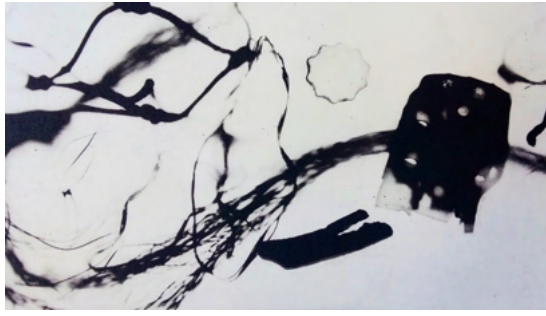


Figure a5: Image of work included in the PhD exhibition: *Ghost Plastics (part one)* – photoetching printed with Bideford Black earth pigment on Somerset.



Figure a6: Image of work included in the PhD exhibition: *Ghost Plastics (part two - carbon transfer)* hammered plastics on Somerset.



Figure a7: Image of work included in the PhD exhibition: *Ghost Plastics (part three - carbon transfer)* on Somerset.

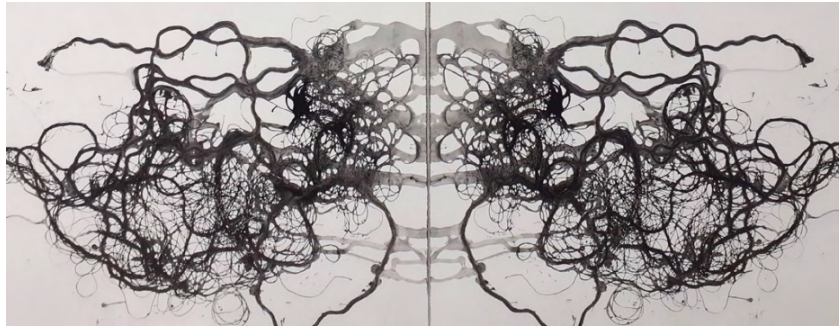


Figure a8: Image of work included in the PhD exhibition: *Ghost Plastics (part four - Bideford Black earth and river water)* on Somerset.

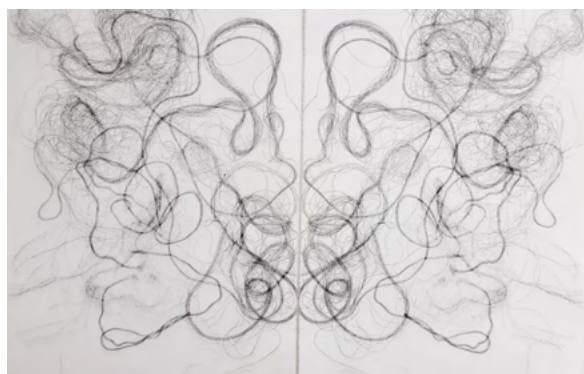


Figure a9: Image of work from the same series as work included in the PhD exhibition: *Ghost Plastics (part five - Bideford Black earth and river water)* on Somerset.

5. *Earthworks* (2019 – 2021)

Materials:

- Collected earth from the base of river cliff erosion points after high tides or storms
- Blotting and Somerset paper
- Estuary water from the Taw
- Remnants of wax from candles used on camping trips visiting the Taw

What:

- After a high tide or storm, the river cliffs along the Taw are often eroded, leading to small points of collapse. This leaves earth at the foot of the river cliff. I collect this earth
- This earth is then dried and ground down
- I mix this earth with collected estuary water (sometimes fresh water further along the walk and sometimes salt water closer to the mouth of the estuary)

- This mix is rubbed onto small rectangles of paper to hold a record of the found eroded earth before it is washed out to sea 5.5 x 8.5cm
- The second process (a11) dips paper rectangles into pigment mixed with melted wax

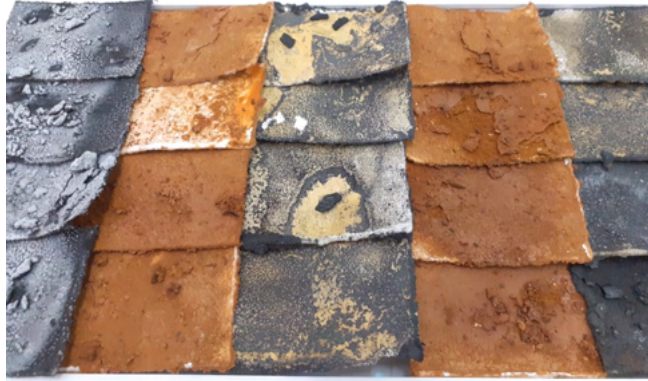


Figure a10: Image of work included in the PhD exhibition: *Earth works* rubbed earth, and evaporated river and sea water, dimensions variable.



Figure a11: Image of work included in the PhD exhibition: *Earth works* Bideford Black earth, and candle wax, collected fishing plastic twine dimensions variable.

Appendix Two: Survey of artists relating to the research

A survey of artist's techniques, material interests and relationship to place, mapping and walking. This is not intended to be exhaustive or call a specific grouping, but is rather in relation to a survey relating to the early development of the research. It recognises as a limitation a geographical focus towards artists in the Global North as an unintended consequence of the location of the research project. Images of this are below, an online copy can be found here for ease of reading:

<https://drive.google.com/file/d/1MMZBPz6qNlIFixADx6chqMm9A-1pktBo/view>

| Specific work (title, date) | How much is Place the start point or an ongoing central focus of the work? | How is Place visually represented? | Is walking integral to the making of the work and how? | What elements of place are the works working with and through what techniques? | Are they using mapping techniques / references? | What techniques are they using? (layers / 1:1 materials tracing or rubbing / erasure / motifs / drawings taken on) | What materials are they using? | How does the work relate to non-human or more-than-human worlds? |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><i>Night Window with Leaves (2015), Smoke Studies IV - VII, 2018, Draw (freelance), 2005</i></p> <p>Anna Barriball</p> | Her work focuses less on specific places more on objects that are particular to a place or a time (architecturally). Primarily internal spaces / places. | 1-1 Rubbing of surfaces in a specific place using graphite or soot (from the place) | No – not as documented. | The specificity of an architectural symbol – that places us in a time or a building. Also the notion of time spent in the place making a lengthy rubbing is apparent. | Not explicitly, more documenting of traces in an internal space. | Rubbings, video. | Graphite on paper / 1:1 materials tracing Candle soot on paper | Works with the non-human through materials like candle soot and through air moving the work once made. Works with trace of human worlds in relation to non-human structures through the residues left behind on buildings / architectural features |
| <p><i>Las Moscos, 2004, Through Darkest America by Truck and Tank, 2013</i></p> <p>Mark Bradford</p> | His local pace around his studio / where he grew up is vital and a central focus. The materials used in the work is collected from the neighbouring streets to his studio so the paintings are made of materials 'of' that place. | Time spent walking in place collecting materials belonging to it like local adverts – using them to create large-scale paintings | Yes in the collection of materials and time spent in his neighbourhood. It is a method to collect material and experience change and gradual shifts and the effects of man made changes like new highways through a neighbourhood. | The socio-economics of this place, often signs of poverty or incarceration through the free ads – pieces of paper advertising local services like free phone calls from prison | His work is referred to as creating an aerial map – and is a way of mapping the experience of living and walking there through the found papers | Collected papers from place layered and bleached and sanded back into. Sanding and layering echoes the processes of adverts and then weathering eroding and fragmenting the papers back again (and the sun bleaching them). So the processes hold a close connection to the weather-world. | Papers coloured adverts found in place | Human trace is worked with in the form of the left behind free adverts. The non-human is worked with more in-directly through an echo of the processes ongoing across the city that weather and break down the free adverts through wind, sun and rain. Bradford works with water and bleach to mimic these elements in a more controlled environment, but allowing the elements to intra-act with the papers in ways that are not fully controlled but open-ended. |
| <p><i>Buffalo Series (2008) and Tracings from LA River (2011)</i></p> <p>Ingrid Calame</p> | The marks left behind in a specific place as the central focus to the tracings – the tracings act as a log of the way the place has been used by other people over a period of time and what marks they have left behind. | Tracings of graffiti and marks on mylar | Yes – walking along the LA river to collect tracings along the route. Done as a repeated act to collect tracings as they shift and change to reflect human activity that has gone on there. | Marks made and left behind by human and possibly animal activity in the place | It could be argued these are re-maps of the place i.e. the L.A. River. The positioning of the marks are not spatially mapped, but the fleeting and overlooked is mapped and often layered to hint at the passage of time and marks adding one to the other progressively. | Tracings collected over time from the place layered. | Pigment, coloured pencil and paint and mylar | The work engages most closely with the traces left behind by other human worlds and activities. There may be also traces of more-than-human and non-human worlds in the form of marks along the tarmac that have formed that are included in the collected traces. The human is Calame's principle reference point. |
| <p><i>(Blackboard Drawings), The Sea, with a ship, afterwards and Island, (1999) Fatigues (2012), More or Less (2011):</i></p> <p>Tacta Dean</p> | The large scale chalk on blackboard drawings of Fatigues were created over the course of a few weeks on-site in a former Kassel tax office | Landscape scenes of the mountains of Kabul | No – not as documented, although interviews reference issues with walking that holds parallels within the work that are unexpected for example 'Boots'. | Stories linked to the place, in Fatigues she used the former Kassel tax office as an important role for the series, as Dean used its two stories to create and bolster a narrative structure for her drawings | She uses notations to suggest narrative elements / notes of experiences in the place. More like a geographical diagram than a map. | Chalk and blending / erasure on multiple panels painted with blackboard paint | Chalk, blackboard paint, panels | Dean holds more focus on the traces of the human worlds within this work, although the material traces within the work (rubbing off and a sense of palimpsest) have a direct material engagement with the non-human. Her writing about time and place, and specifically about W. G. Sebald is also relevant in a direct relationship with time and human trace. |
| <p><i>N.Y.C Rainfall (1987)</i></p> <p>Sandy Gellis</p> | The place is central as is the rainfall in that place over a year long period as recorded daily. The work shows one element of how that place has been experienced each day over a year. | By leaving a material that will react to the weather out in the place over a pre determined period of time, the output reflects the weather condition – i.e. rainfall and each plate forms a record of a years worth of rainfall logged each day | Not as documented. The work is static – as in located in one position with time and weather as the variables rather than human movement. | The weather in a specific place over a specific time | Logging or recording techniques that could be positioned as re-mapping NYC through specific weather patterns over a duration. This attends to the fleeting or often over-looked. | Plates left out over time to record rainfall, the effects hint at the frequency / volume of rain that fell on particular days throughout the year | Water, earth, air and light to make work. | The non-human is directly attended to through the weather-world and time in this work. The plates hold a register of the rainfall over time, so that the trace is weather-based and not human. |
| <p><i>Arctic Circle Islands (2014) Watermark (2015) Evaporation series (Black) 21, 2014</i></p> <p>Tania Kovats</p> | The work is from specific places and in watermark uses natural processes to depict the behaviour of the water evaporating from a place. | Through map making (<i>Arctic Circle</i>) and through natural processes to make work | Not as documented, although the artist discussed mindful techniques and walks in relation to her practice more generally | The effects or water on the landscape is the central engagement | Yes – specifically in <i>Arctic Circle Islands</i> , but the <i>evaporation series</i> could form re-maps of a place, although the specific places are often not referenced within the work | Tracings, evaporation to create their own marks as a result of this process | Ink, water, tracings, paint | The non-human is engaged with directly as a result of the water, earth and time that makes the evaporation works. The human is engaged with in relation to the Arctic Circle Islands (2014) that removes the key and scale of the islands reducing them to outline. The impact of climate and rising seas may be an indirect influence within the work although this was not referenced at the time of its making, but the artist has spoken extensively about the impact of Climate Change over many more recent interviews and panel discussions (for example <i>Invisible Dust series</i>). |

| Specific work (title, date) | How much is Place the start point or an ongoing central focus of the work? | How is Place visually represented? | Is walking integral to the making of the work and how? | What elements of place are the works working with and through what techniques? | Are they using mapping techniques / references? | What techniques are they using? (layers / 1:1 materials are they tracing or rubbing / erasure / motifs / drawings taken on) | How does the work relate to non-human or more-than-human worlds? |
|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eve Ingalls <i>Folded Field (1987), Your Turn (1981-2008), Folded Time (1982 – 2009)</i> | Use of archaeology as the start point of investigating a place, she describes her mark making as her archaeological tools | Through mark making that refers to her investigation of the archaeology of the place. Time lapsed between the initial marks and the second set so this represented time and layers at work in the place | Not as documented, the work attends to a small place (on foot) but walking is not noted as a major influence in the making. | Aspects of time and archaeology | Mark making as representative of the archaeological tools in a dig with the canvas the surface area of the dig. Again an argument that it is re-mapping through attention to the fleeting and overlooked. Edward Casey includes her in the Artist's Mapping research. | Layer, mark making, canvas Layers and time along-side archaeological investigation | She works with finds that are often human and non-human together so that traces are examined through these finds and a close engagement into these worlds through the materials is enabled. |
| Debbie Locke & Sarah Dudman Collaboration <i>Sheep-cam in Barn 00.45 – 02.25 (2013)</i> | The place that is being navigated by the farmer and the animals is researched as an exotic place – input, as is the movement of the animals. | Using lines taken from the GPS data that are then partially buried and reapplied with new data on top. | Yes – although not always in person, the walks may be GPS tracked walks of other people / animals as in the farmer and his sheep in the Blackdown hills. | The movements of the farmer and sheep across their land. | Yes – tracking the sheep and farmer using GPS then using the data to make work | Drawing – line, and painting / layers of Gesso / gouache to represent layers of time | The more-than-human worlds of the farm animals (sheep) is engaged with closely through racking their movement and then making work that stems from these GPS tracked records. The Farmer's movement are also tracked so far there is a visual intertwining of the more-than-human and human movement held within the paintings and drawings and within the layers to hint at the passage of time. |
| London Mackenzie <i>Saskatchewan Paintings (1996),</i> | The Saskatchewan paintings layer historical, geographical and fictional sources about places where McKenzie hasn't visited, but has links to Tacta Dean's <i>Feliques</i> in approach to Place in that they are about a place but the artist has only researched it and not spent time there. | As an alternative map layered on top of facsimiles of significant charts from Canada's past. | Not as documented | Questioning the colonial histories of a place mapped and re-mapping it to afford other histories and other versions of the place documented. | Yes – copies of old documents of historical significance to create her own map like compositions with an aerial map quality | Gesso, graphite, charcoal, chalk, gouache Her paintings start with facsimiles of significant charts from Canada's past she then layers with her own stories and impressions. Creating her version of a map. | Trace of the human is the primary focus, with often overlooked documents used to develop the work to offer different historical narratives of the place that move beyond dominant narratives. |
| Margot McLean <i>Virginia (1993), Wyoming (1990)</i> | Materials collected from the place form part of the work | Made by the place – 'Earth Maps' are left on the site so that the place effectively makes the work | Not as documented | The natural processes at play within the place are captured through their effects on the canvases | Not explicitly although Edward Casey includes this as an example of <i>Earth Mapping</i> . The work actively engages with recording techniques | Soil, leaves, acrylic Recording the natural processes by exposing the canvases to the place | The more-than-human and non-human worlds of soil and leaves etc. are part of the work and also make the work as it is left in specific locations over time to be formed in this way - it is therefore a close tuning into matter. |
| Julie Mehretu <i>Grey Area (2009)</i> | Her residency in Berlin was central to making the work and researching Berlin's past and unrealised future (planned architecture never built) | Through multiple layers of wireframe architectural drawings some that are painted over in semi translucent layers. This hints at the many layered history / versions of Berlin at work | Walking not documented. Time spent in place is important. <i>Grey Area</i> paintings were made as part of a two-year residency living and working in Berlin. There is an assumption that walking the streets was a part of this process but it is not explicitly documented. | the many layered history / versions of Berlin at work. A complex and multi-layered history and multiple view points. | Not explicitly, the work holds more connection to architectural blue prints than mapping techniques, although it is making visible un-realised architectural plans in the context of hidden or unrealised histories. | Graphite, gesso, polymer, acrylic, ink Drawing, painting, layers and erasure | The work makes visible human architecture alongside human planned architecture that was unrealised and the political implications of the architecture as structures of power. It does not explicitly engage with more-than-human or non-human worlds, but with human trace as historical legacy and with human trace as gestural marks. |
| Kathy Prendergast <i>Black Map Series (2009), The Land Describes Itself (2012)</i> | World maps have been painted over so that all that remains looks like constellations of stars, she aims to 'create an emotional atlas of the world' (Kerlin Gallery Press Release <i>The Grey Before</i> Down | Using the maps of the place or continent she draws on top of the maps | No. use of maps and drawings of maps are not about a single place, but make comment on use of names and how we experience place and the information we expect maps to contain. | An emotional geography of the place | Yes - explicitly working with mapping as covering mapping in a mode that questions what is mapped, by whom and for who | Maps, paint, ink Drawing and painting over maps | The approach engages with mapping as a human legacy, through erasing the 'data' included on the maps, the ownership of the land, the boundaries are removed, and the place names are erased, what is left are the folds as a mode of trace of human contact - and a remaining visual register that relates to a map. |

| Specific work (title, date) | How much is Place the start point or an ongoing central focus of the work? | How is Place visually represented? | Is walking integral to the making of the work and how? | What elements of place are the works working with and through what techniques? | Are they using mapping techniques / references? | What techniques are they using? (layers / 1:1 materials tracing or rubbing / erasure / Motifs / drawings taken on) | What materials are they using? | How does the work relate to non-human or more-than-human worlds? |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><i>Earth Rubbings: Moon Series</i> (1973), <i>Sheep's Milk and The Cosmos</i> (1999), <i>Nazca Lines Star Chart</i> (1981-82)</p> <p>Michelle Stuart</p> | The ground of the place dictates the work – then her pressure applied on the paper against the ground creates it | Through ground rubbings | Not as documented | The ground – in Earth Rubbings and the natural processes at work in the place | More recordings of the ground but could be seen as 1:1 mapping of a segment of ground. | She has used rubbings of the earth, made through a process of smashing, pulverising, rubbing and imprinting soil and rock into sheets of scroll-like paper | earth, seeds, plant parts, ash, fossils and archaeological shards | The earth, seeds and other materials are closely engaged with as a way of working with more-than-human and non-human worlds in the making, the outcomes are more controlled by the artist that made in collaboration with the materiality of these worlds. |
| <p><i>Missile Tracking Radar (MTR)</i> (2010) and <i>PSYCHOPOMP</i> (2010)</p> <p>Mariele Neudecker</p> | More object specific than place specific, with the place of Historic Nike Missile Site, Headlands and the Headlands Centre for the Arts, Marin County, California, USA implicit within the work and the marks recorded on the surfaces of the objects. | Through rubbings of the MTR and the missile head | Not as documented | The residues of marks and trace held within the surfaces of these human-made and human / all life destructive objects, housed within the place of the Nike Missile Site. | Not explicitly mapping, although there is a 1:1 mapping of the surface of the objects available, more a documentation through touch / rubbing of the surfaces through graphite. | Graphite rubbings of the objects on a 1:1 direct scale. | Graphite, object and paper | A close engagement with the 'natural and technological worlds' through the human notion of the 'Contemporary Sublime' |
| <p><i>(Tessellation Paintings)</i> <i>Landscape No. 82</i> (1989) and <i>(Exe Estuary Paintings)</i> <i>Landscape No 624</i> (1999)</p> <p>John Virtue</p> | Place is central to the work – in Exe Estuary series the walks make at the same time on the same day each week lead to Virtue making drawings that form the paintings. In the tessellation works his drawings are arranged as the work providing multiple view points of the place | Drawing and painting – using motifs taken from the landscape and the use of repetition of these motifs | Yes. Work explicitly made on and as a result of walks e.g. along the Exe Estuary in Devon. Repetition of a specific route on a specific day at a specific time in order to log his experiences of the place in a body of paintings. | An essence of the place as experienced through his walks. Landscape views and visual motifs of the place | No – for Exe Estuary, although tessellation paintings arrangement has a grid like map reference | Drawing, painting, walking in place | Charcoal, ink, enamel | The early tessellation works that are multi-panel works following the walks on his postal round in Green Haworth engage with the snapshots of views of his place and the walks, the more-than-human is not a collaborator, but a source of inspiration to document. |
| <p><i>Blue - summer studio</i>, (1985 - 2003)</p> <p>Merrill Wagner</p> | She wants to study the particular effects of the elements in a place on her panels – for example the sun | The elements at work within the place are represented rather than the place itself | Not known more research needed | The natural elements at work for example sunlight | Closer to recording / documenting of the affect of weather on paint samples on fence posts. | Time and prolonged exposure to see the results of sunlight over time | Metal panels, paint, sunlight | The weather-world is a co-creator through leaving the painted fence panels in contact with sun and weathering over years, so that the documented fading is a record of how these worlds intra-act. |
| <p><i>Mowing For Golf series</i> (2015) and <i>Ghost Series</i> (2006–2016)</p> <p>Jeremy Wood</p> | His movement in the place and how the place dictates his movement is the central focus | Through lines drawn that are collected by GPS logging of his movements in the place over time, in London for example (<i>Ghost Series</i>) | Yes, but the work is about his daily actions of walking e.g. mowing the lawn as recorded using GPS tracker. | How the geography dictates movement, how humans interact with the place, how the marks we leave behind in the form of invisible traces of routes taken can be layered over time to create a map of our experience walking and working in a place. | GPS logging as a way to create maps of individual movement in a place | GPS, tracking of all movement in a place over a period of time | ink drawings and printing of the lines created | Human trace is explored through the work through tracking the motion of the human and the motion of the lawn mower (driven by the human) according to the land it is mowing. This attends to something seen as an 'everyday' activity that is often overlooked - but equally detrimental to the more-than-human worlds in the grasses being mowed (although the work doesn't specifically reference this). |
| <p><i>Earth Rubbings Series</i>, <i>multiple dates - ongoing catalogue</i></p> <p>herman de vries</p> | Yes, it relates to specific earth samples taken from specific places | Through the earth rubbings of all of the different earth types collected in a single place. | No, although walking to collect the earth samples is implicit in the work in how it was collected and therefore made. | The array of earth colours and textures within each place, held as a direct record onto paper | The grid reference of the paper rectangles (all the same size) and the spatial locations of the earth samples strongly suggests this is a re-map that is ongoing, de vries refers to it as a catalogue rather than a map, but there are close connections. | Collected earth rubbed directly onto paper, not covering the whole surface (the amounts of earth collected are the same in each location). | Earth, paper | The non-human and more-than-human worlds of the array of earth that can be found in each place is the direct engagement, this is done through individual touch as the earth is rubbed onto paper. |

| Specific work (title, date) | How much is Place the start point or an ongoing central focus of the work? | How is Place Visually represented? | Is walking integral to the making of the work and how? | What elements of place are the works working with and through what techniques? | Are they using mapping techniques / references? | What techniques are they using? (layers / 1:1 motifs / drawings taken on tracing or rubbing / erasure / Motifs / drawings taken on) | What materials are they using? | How does the work relate to non-human or more-than-human worlds? |
|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Daro Montag <i>This Earth (2007), Leaf Cutter Ant Drawing (2013)</i> | <i>This Earth</i> offers a close tuning into the land directly around his home in Cornwall and the earth core samples / digging down to uncover the earth layers. | Place is represented through chromatography as a mode of capturing the marks and colour of the soil samples in contact analogue prints | Not human walking, although the ants walking in the <i>Leaf Cutter Ant Drawing</i> - yes. | The enormous biodiversity of soil in one place underfoot - the layers that as humans we are often not aware of. | The location of the soil samples are mapped spatially. The diversity of the soil could also form a re-map of this place in geological / earth terms. | Earth core techniques, analogue photography | Chromatography, analogue prints and graphite powder and leaf cutter ants | The non-human and more-than-human worlds are directly engaged with in this work through the soil samples and chromatography, and the more-than-human critter worlds of the Leaf Cutter Ants as a mark making mode of tracking their movement over paper through trace of graphite powder. |
| Gabriel Orozco <i>AstroTurf Constellation (2012)</i> | Collected finds that are specific to locations - here Pier 40 in NYC | The specific place (AstroTurf on the pier) is the central focus to find overlooked debris to make the work. | not about walking, although walks to find the debris are implicit within the making. | The overlooked, forgotten and discarded human debris left behind in one specific place at a particular time. | The finds are not spatially mapped according to where they were found (although the location is aligned to the work to locate them in space and time). The finds offer re-maps of this particular place at the time of its making. | collecting, arranging as a form of assemblage. | The found materials from the AstroTurf. | A close attention to the over looked and under valued debris of human trace that is usually inorganic and in other settings would be regarded as rubbish or trash. The weathering / rusting and erosion on the objects is also a consideration. |
| Kathy Hinde <i>Rover Traces, 2020</i> | This work is specific to the River Frome and the sediment / algae recorded through this mode directly onto 16mm film | The place of the river and the place of the non-human worlds are collected and recorded through this mode of working. | Yes, in the sound walks in particular | The sediments and discarded debris on a small scale held within the river waters in the River frome | More documenting the debris and sediment as it flows that specifically engaging with mapping, although again an argument could be made for this work to form a re-map of the River Frome and the more-than-human and non-human worlds and their movements. | Direct contact onto 16mm film to form a 1:1 scale record of the sediment. | 16mm projection | The work tunes into the scale and movement of the non-human and more-than-human worlds within the River Frome by charting their movement. |
| Liang Shaoji <i>Nature Series No. 103 (2004)</i> | Work created in collaboration with silkworms on daily newspaper - the home of the artist is the location but this is not explicitly a 'place based' inquiry according to the artist | The place of the country (China) and the province (Tiantai, Zhejiang Province) is implicit within the newspaper that the silkworm intra-act with | human walking - no. But movement of the silkworms - yes. | The daily news of and within this place as reported through one specific paper | arguably this maps the movement of the silkworm on and within the surface. | chance material intra-actions between silk worm and newspaper | silk, paper. | The more-than-human in relationship with the trace of human (news) and production (newspaper). The more-than-human is engaged with specifically as the principle mark-maker within this work. |
| Olafur Eliasson <i>Connecting Cross-Country with a Line (2013)</i> | Yes, in that it relates to the train and the particular journey on the train through different places that the drawing machine has recorded. | Through the lines of motion formed through the train crossing through particular places | Not in this work although movement is a central component. | The place of the train in contact with the places the train passes through - the movement, the motion, the bumps in the track etc. | Perhaps re-mapping a journey through motion, arguably more drawing a journey through the drawing machine | Drawing machine calibrated to pick up on the movements of the train - a low-f (relatively) approach to making the machine | ink, balls, disk and paper | The non-human is tuned into via the movement of the train, the intra-action between the human made, the recording materials, time and motion and the camber of the ground the train passes over. |
| Tim Knowles <i>Tree Drawings 2008 and other dates</i> | Yes, the work is specific to particular trees worked with in particular places over specific durations | Through working with particular tree specimens in a particular place as a drawing mechanism | Not documented within this work, although yes - within the <i>Wind Walks</i> | The place is specific in that the trees selected are particular to a place. The work engaged directly with the more-than-human worlds of the trees and the weather world as they intra-act. | An argument could be made that this is a re-map of the place of the trees and the weather intra-acting. It is a recording device for the movement of the tree and weather intra-action. | Drawing machine (low-f) that attaches to the trees to enable the trees to 'make' the drawings that are set p by human touch and then left to form through the tree and weather intra-action. | ink, pen, paper, tree board | The wind and its intra-action with the branches of the tree and leaves over time is the central element captured through this collaborative way of working. |
| Ragna Robertsdóttir <i>Lava Landscape, (2018, 2021)</i> | Yes, work is specific to Hekla in Iceland and specific to the textural grade of the lava collected and worked with from that site | By working with the lava samples collected | Yes, in walking to the location to collect the lava samples, although walking is not a focus of the work in itself. | The work engages directly with the textures of different grades of volcanic pumice stone formed through eruptions on Iceland in specific locations. | This forms a re-map of the shifting land of the volcanic eruption and of the textures of the lava flow through the work. | Through collecting the lava and grading it according to texture within the internal space of a gallery wall or studio | Volcanic Lava - site specific. | This work tunes into the specific textures of the lava from one location at different times over different years, with a close attention to the textures grades of these non-human worlds. |

Appendix Three:

Exhibitions, Symposia, Conferences, Publications relating to the research

Selected Exhibitions of work stemming from the research 2020/21

Tidal Timespace, Eclético ArtSpace: Galería Arte Contemporáneo, Guadalajara, Mexico, part of Heather Green's 'Tidal Timespace: Imprints & Palimpsests' Exhibition, October 2021.

Climate Action and Visual Culture, Online exhibition and publication, in partnership with University of Huddersfield, July 2021.

Landlinks part of *Groundworks*, Three Storeys Gallery, Nailsworth, June 2021.

Art of Science, Exeter Science Centre, Dec 2020.

Environment, Haus A Rest Zine, Issue 8, artwork submission, Dec 2020.

Soapworks, Centre of Gravity, Bristol, Space Place Practice Research Group, Publication, Oct 2020.

Hello World, TransCultural Exchange 20th June 2020.

Incendiary, The Pound Arts Centre, Corsham, March – June 2020.

The Strandline, Art and Environment, Burton at Bideford environmental artist award, permanent collection, Dec 2019 - Oct 2020.

2018/19

A Gathering of Unmasked Possibility, exhibition and drawing / climate workshops, Centrespace Gallery, Bristol, Nov 2019.

Loss & Lucidity, Fabrica Braco de Prata, Lisbon, Portugal, August 2019.

This Woman's Work, Fringe Arts Bath, May - June 2019.

Incendiary, Lansdown Gallery, Stroud, Feb 2019.

Mapping Place, Solo Show, Contains Art, Watchet, North Somerset, Aug – Sept 2018.

1000 days in..., Bath School of Art and Design Gallery, Sion Hill, July 2018.

Hold the Line, Solo Show, Arcade Cardiff, May - June 2018.

Between The Shadows and The Light, The Pound Arts, Corsham, Wiltshire, March – April 2018.

2017 /16

Embodied Cartographies, Fringe Arts Bath, Walcot Chapel Gallery, Bath, May – June 2017.

Gestures of here & there: la fabric sensible des lieux, Arts in The Alps Doctoral Spring School, Grenoble, transdisciplinary practice based research into Site specific response to disused industrial site, June 2017.

Library of Pilgrimages, Space Place Practice, Trowbridge Arts, Sept – Nov 2016.

Imagined Landscapes, Royal West of England Academy, Bristol, Feb – June 2016.

Walking...Landscape...Memory, Salisbury Arts Centre, Jan-Feb 2016.

Symposia / workshops

Being Human Festival panel speaker – 'embodied approaches to more-than-human worlds', Nov 2021.

Life in a Square, Forest of Imagination, biodiversity mapping workshops, 26/17th June 2020.

Tread Lightly on the Earth Beneath, (Re)Imagined Landscapes, University of Bristol, 9th, 10th June 2021.

Tread Lightly on the Earth Beneath, Process Practice and Climate Crisis, symposium exploring the intersecting threads of politics, activism, and creativity in responses to the environmental crises, 19th Feb 2021.

A Gathering of Unmasked Possibility Centrespace, Bristol, Drawing and talking workshops - the emotional fall out of climate crisis, Oct 2019.

An Uncertain Forecast Panellist presenting artwork, Bath Spa University, April 2019.

Re-Imagining Places and Landscapes through Walking Practices and Methodologies, European Geographers Conference, panel speaker, Galway, Ireland, 15th - 18th May 2019.

Mapping Place, all-age workshops map-making with found materials, Contains Art, Watchet, Sept 2018.

Embodied Cartographies, Walcot Chapel Gallery, Bath, exhibition talk, June 2018.

Practices of Investigating Spaces through Movement, Space and Place Research Hub presents: Arrivals and Departures Symposium, London College of Communication, 18th May, 2018.

Between The Shadows and The Light, exhibition talk, The Pound Arts, Corsham, April 2018.

Drawing an embodied line through space, place and time, Elastic Spaces International Symposium, Bath Spa University, October 2017.

Research presentations for Bath School of Art MFA, Bath Spa University, various dates 2015-19.

Interviews / Articles / Chapters

Slowing Down, Tuning In, chapter in *Art in an Era of Ecocide*, for publication, Bloomsbury Academic, spring 2022.

Tread Lightly on the Earth Beneath, Hyphen Journal, *Ecologies* Issue 3, for publication, March 2022.

Scratching the surface of loss and abandonment: walking as a way to make visual responses to past histories in a place, Question Journal, A New Journal for the Humanities, Issue 1, *Beneath the Surface* (ed Mills, G., Stanmore, T.), p.58,

<https://www.questionjournal.com/issue-1>

Cambridge Curiosity and Imagination, article for 'Wild Exchanges': Wild Exchange - The Black Ground

Research groups:

eARTh, (education, arts, environment research group) Bath Spa University transdisciplinary research group.

MASER (Material | Art | Science | Environment | Research), Bath Spa University transdisciplinary research group.

SPP (Space, Place, Practice) UK research group.

PLaCE International research group (Place, Location, Context and Environment).

Appendix Four, Viva Exhibition; Reflections and Images of Installation:

Daily reflections on the Viva exhibition October 9 – 22nd 2021:

What follows is a series of short journal entries written within the exhibition space or shortly after time spent in the space. This was requested as part of the PhD viva on 8th October 2021 so follows this date. This journal writing coincided with small interventions that my body made within the gallery space most days to coincide with the high or low tide time⁶¹ on the Taw. The interventions included sorting and changing the plastics in the plans chest and on the overhead projector, moving other objects and works around within the plans chest, touching the *Earthworks* – the Bideford Black and Ochre wax rectangles so that they made trace drawings on the walls behind, and changing the order of the *Ground Texture Recordings* book and the typed journal reflections on tracing paper.

The aim with this approach was to ‘reactivate’ the work in the space (connecting with the anarchive, see Chapter Five) and to take on the action of the tide in sorting and moving the work in the gallery space as it was shifting the sand and boats along the Taw. These activities instigated by me happened alongside the perpetual changes that were caused by shifts in air humidity, temperature, air conditioning and heating systems, other bodies passing by, electric lighting, sunlight and shadows, sounds emitted within and by the building...this list is not exhaustive, nor is it intended to be. Visitors into the space were also invited to touch the work and plastics in the plans chest and to touch the typed journal entries on tracing paper held within a clipboard and to unclip a copy of the exhibition map to navigate the space before returning it to the clipboard at the end of their visit.

This means that in combination, the work was not static and it formed multiple iterations within the gallery space so that there was no single ‘hang’, nor version of the exhibition. A visitor each day would have experienced a subtle shift in the work, just as they would have brought their own experiences and emotional landscapes into the gallery space. There was also no single ‘author’ or ‘curator’ of the space, the human, the non-human were tangled together. These intentions were communicated on printed paper held within a clipboard by the entrance, the clipboards held a link to an extended notion of fieldwork. A copy of the information hung within each clipboard to communicate these intentions to shift the work within the exhibition space is included at the end of the daily reflections in the text below.

At the end of Appendix Four there are images of the work taken during the exhibition, these show some of the gradual shifts in work as paper curled, marks were made on walls and plastics and other works were moved within the plans chest and on the projector. These are not intended to be an exhaustive documentation of the changes made and the fragments of rust falling within the space – the intention remains that this record is held within the materials of the work during the time of the exhibition rather than within a digital realm.

⁶¹ Tide times sourced from www.tidetimes.org.uk, times recorded here are for Fremington Quay, North Devon on the Taw Estuary.

Monday 11th October 2021

Time in gallery space 9.50 - 10.30am

| Tide Times | | | BST: <input checked="" type="checkbox"/> |
|------------|-------|--------|------------------------------------------|
| Hi/Lo | Time | Height | |
| Low | 04:15 | 0.26m | |
| High | 09:57 | 5.46m | |
| Low | 16:34 | 0.27m | |
| High | 22:23 | 5.08m | |

The bulbs have blown over the weekend on the projector. Lights are out, as energy prices soar and fossil fuel companies eat up their subsidies.

The paper bends and curls, the wind blows in each time the reception door slides open taking the large *Ground Texture Recordings* on paper up into the air to slowly settle back towards the wall to curl inwards and outwards. One side and the other are never quite the same.

Today's high tide was at 9.57, I brought a handful of plastic debris out of the plans chest drawer and swapped over some of the fishing twine, bottle tops and comb with some 1950's glass less glasses and other plastic fragments. The 'books' and other work in other drawers I moved around, some unclipped, some clipped differently, some pushed back and some brought to the front. It wasn't something thought over for long, but 'thinking movements' – thoughts 'felt' pushing my hands deep into each drawer, feeling the rust and salt crystals and the paper, moving it around to make different connections, start different conversations, leave different residues. The rust is rubbing onto other books to leave other marks possibly after weekend visitors have pulled things forward and pushed things back, material traces hinting at other fleeting assemblages that I did not witness. I looked at my hands as I left the gallery space – each fingertip coated with an oval of rust residue.

Tuesday 12th October 2021

Time in gallery space 10.45 – 4.47pm

| Tide Times | | | BST: <input checked="" type="checkbox"/> |
|------------|-------|--------|------------------------------------------|
| Hi/Lo | Time | Height | |
| Low | 04:52 | 0.29m | |
| High | 10:48 | 4.76m | |
| Low | 17:17 | 0.30m | |
| High | 23:18 | 4.26m | |

Today was a day of many conversations. People came and went, questions were asked about materials and processes and relationships and durations. To see something that you are so entwined within through the body of someone else is to understand that what seems clear and recognisable may in fact be almost completely hidden. But different things, unexpected things, things as yet unknown reveal themselves through other bodies and other memories and other associations collaborating with the materials within the gallery space within a time. I moved things within the plans chest and plastics on the projector at the high tide point along the Taw. I reflected on the conversations and their significance. I told stories about my grandmother and her life within the estuary. Later at home I decided to include more text within the journal notes typed on a 1950's type writer onto tracing paper. I included the final passage of the thesis – the afterword to include in words within the gallery space the missing space that was held within the paper surrounded by rust traces on the wall opposite to it. The materials tell their own story, but they too have a complicated story woven within and through the words included and the words left out. The words typed onto tracing paper and the fragile nature of the old typewriter mean that everything is not quite clear, words have disappeared or are not fully formed, one page blurs into the next, the words descend into and emerge from within a fog of semi-opacity. Today was misty when I awoke, the world was a bright and startling white. By the high tide time the sun had removed the fog and it was just another memory attached to another time.

Wednesday 13th October 2021

Time in gallery space 11.50 – 12.45pm

| Tide Times | | | BST: <input checked="" type="checkbox"/> |
|------------|-------|--------|------------------------------------------|
| Hi/Lo | Time | Height | |
| Low | 05:40 | 0.33m | |
| High | 11:54 | 4.09m | |
| Low | 18:19 | 0.33m | |

There is an emotional register here that I hadn't recognised until now. The work holds a record of the Taw and the things encountered and the entangled moments and the passage of time. But it holds too something of how I was feeling on any given day, at any given moment during or after the walk. On days when the world felt a little too much, when news of impending tipping points felt like they might tip me over, I noticed today the triangles drawn on the OS map are a little bit smaller, a little bit less certain, a little bit denser. My footsteps that have made marks with the earth and textures of the estuary were a little lighter, a little quieter, a little hesitant, the marks held within each plate sit more on the surface, the plates are less bent, less broken. They are flatter like a flat mood. *Scratching the Surface* now that it hangs together in one long looping line holds a different difference too. I

had noticed before the weather and texture changes, the harder lines are lines from barnacles and sharp rust shards, dryer weather. The softer lines are wetter weather, a smoother passage pushing my hands / plates along the length of each ship. But they are too softer lines through softer touch, softer touch holds an emotional residue. It might be more careful, but it might too be more tentative, a little unsure, a little less comfortable in the body I carry around each day. Harder lines hold a little more speed, a little more certainty, a little more ownership of my body in that space doing that action which calls an attention to itself within the public space within which it is undertaken. To bring together all the repetitions and all the iterations into one space is to open up new understandings of what was going on in the doing, in the making, in the walking, in the being, in the worlding.

Thursday 14th October 2021

Time in gallery space 13.00 – 14.10

| Tide Times BST: <input checked="" type="checkbox"/> | | |
|----------------------------------------------------------------------------------------|-------|--------|
| Hi/Lo | Time | Height |
| High | 00:35 | 3.57m |
| Low | 06:54 | 0.35m |
| High | 13:23 | 3.72m |
| Low | 19:53 | 0.34m |

Put in more writing

Took out plastics

Put in more

Moved them

Bulbs blew

Wind blew

Earth fell

Rust fell

Rust began to grow on the wall

A spider crawled up the wall to live behind the ghost plastics

Other sounds filled the space covering and mingling with the sounds that were playing

People came to visit

Conversations behind flimsy plastic masks

Many more walked by. Glanced in. Walked on.

Bird song on the Avon joined recorded sounds of bird song on the Taw

The river flowed past the building all the while

Politicians talked about all the things they'll say they'll do but won't

A Glasgow summit loomed

Hollow promises filled carbon heavy spaces

Dust and wax, rust and earth began to crumble and draw on walls and floors and finger tips.

And I told stories of the taw through stories in the scratchy rusty flaky stuff. And stories of someone else's war through someone else's life held in other fragile material forms

Friday 15th October 2021

Time in gallery space 14.50 – 15.50

| Tide Times | | BST: <input checked="" type="checkbox"/> |
|------------|-------|------------------------------------------|
| Hi/Lo | Time | Height |
| High | 02:16 | 3.39m |
| Low | 08:45 | 0.35m |
| High | 14:59 | 3.94m |
| Low | 21:38 | 0.33m |

As I go into the gallery space a plastic chocolate wrapper follows me in, blowing across the floor. The pressed tin cans onto paper are all out of the plans chest, left on top, half on the chest, half bent over the side. The paper gallery plan is crumpled at the edges and held at a precarious angle within the clipboard pinned to the wall. The lights are off. I go upstairs to switch them on. I move the plastics, take them off the projector and replace them with different tangled stuff from the bottom drawer of the plans chest. The tracing paper curls at the edges, I walk out for a tea, on my return someone peers at the typed letters on paper. I leave them to it for a while. Later I have conversations with others in the space about why we make, what it means to make, what it means to make to make sense of what it might be to be human. I asked the gallery cleaner not to clean up the crumbling rust, so no one has been in to sweep the floor, there are small balls of tumble-weed fluff and hair accumulated over two weeks that skit across the floor each time the main door slides open on its electric passage through time. I long to be walking on the estuary, to sink my boots into the silty sand, I wonder how the ships are and whether the rust continues to rust and the barnacles continue to fall and the tides continue to draw their lines up and down the sand each day.

Saturday 16th October 2021

Time in gallery space 16.05 – 16.50

| Tide Times | | BST: <input checked="" type="checkbox"/> |
|------------|-------|------------------------------------------|
| Hi/Lo | Time | Height |
| High | 03:45 | 3.84m |
| Low | 10:14 | 0.33m |
| High | 16:11 | 4.56m |
| Low | 22:53 | 0.31m |

I'd not thought about the exposure of the work. The work is hung for other people and things to see / feel / pass by. It feels exposing. It feels a little bit too public. What is this thing that is 'the show', the making makes more sense to me, the making is a doing, a making sense of *through* doing, a working out. The 'showing' is something else, it is a

sharing, it can be generous, collaborative, conversational, improvisational, reciprocal. I have hoped it is all of these things and other things too. But it is something else too, something I am less comfortable with. Something a bit needy. Something that seeks praise and attention. Something I'd rather not think about in the everyday. But something that hanging the work and sharing the stories of the work makes not thinking about not easy. When people pass by with a glance but don't come in that's fine. How many times have I done the same to others. But when people come in, look around and leave in silence seconds later. There is a discomfort in that which can unsettle. There is a child-like quality in the need for praise that never leaves us. No matter how much we think it has gone. When parents come or don't come, when silence is the only meeting point I feel the overwhelming temptation to climb into one of the drawers of the plans chest and hide with the sounds of the Taw for company. Today is a day for lying low. I don't spend much time in the space today. Today is a day for distance.

Sunday and Monday 17th and 18th – no visit

Tuesday 19th

Time in gallery space 11.45am – 16.30

| Tide Times BST: <input checked="" type="checkbox"/> | | |
|------------------------------------------------------------------|-------|--------|
| Hi/Low | Time | Height |
| Low | 00:34 | 0.28m |
| High | 06:06 | 5.45m |
| Low | 12:52 | 0.28m |
| High | 18:22 | 5.87m |

There has been a change in my absence. Probably only noticeable because of the days I have been away. The work looks a little more crumbled and curled, it looks a little less like I had anything to do with the making of it. It exists now in its own right in its own space in its own way. I'm just another visitor passing through and touching some bits of paper. I replace work left out of the plans chest into other drawers. I move some books forward and switch some work round. On the overhead projector I place different plastics from the bottom drawer – a net that maybe once held plastic ducks in its space. I once heard of a container ship spilling thousands of them into the ocean – they bobbed along on different journeys the world around washing up for years after the date of their first salty swim. I wonder how long this work might last and where it might go next, will it get to crumble and bend in another place at another time. Or will it spend long years buried deep within the plans chest as more things pile on top, pressing them flat, smudging earth off surfaces, mingling the matter. Covid cases are going up. Nerves are jangling. Kids are off school. Students are coughing. It is a very different world to the world I thought I knew when the walks began.

Wednesday 20th October 2021

Time in gallery space 12.20 – 13.50

| Tide Times BST: <input checked="" type="checkbox"/> | | |
|------------------------------------------------------------------|-------|--------|
| Hi/Lo | Time | Height |
| Low | 01:14 | 0.27m |
| High | 06:40 | 5.67m |
| Low | 13:30 | 0.28m |
| High | 18:55 | 5.94m |

I'm the first person in this morning. The lights are off, the air seems still. There is more rust accumulating on the shelves, more on the floor framed by fragments of mud that hold the shape of the tread of a shoe passing through. The work in the plans chest has made new journeys by someone else's touch. The walls hold more marks by someone swinging the waxy earth rectangles on their fishing twine hook. Someone has flipped them round like a filo-fax. The projector goes on and the hum begins. I move plastics around, some spill out of the light and into the darkness. Some move into focus, others blur. The printed words have mostly been taken, I print more, flat copies to join the last of the bent and handled papers in clipboards. Haraway's quote speaking out into the storytelling space of the matter, 'It matters what matters we use to think other matters with; it matters what stories we tell to tell other stories with....'

Thursday 21st October 2021

Time in gallery space - 11.00 – 19.45pm

| Tide Times BST: <input checked="" type="checkbox"/> | | |
|------------------------------------------------------------------|-------|--------|
| Hi/Lo | Time | Height |
| Low | 01:50 | 0.28m |
| High | 07:11 | 5.74m |
| Low | 14:06 | 0.28m |
| High | 19:27 | 5.89m |

People have come that I haven't seen for such a long while, emerging with Covid stories, with new lives formed out of new ways of being these months past. We catch up over coffee, the paper bends in the middle distance, listening in. We talk about illness and wellness, making and touching, we wave each other off in the distance and hug the space of the air where our bodies might have been. Today the prints of the textures of the ground underfoot have curled away from the wall and from their pair as if repellent to the matter in their midst, as if they have had an argument over night, as if they might be on a slow

journey of levitation towards the lights above. Today is the last day, the day for the work to come down and reclaim a space in the plans chest. A day to collect rust fragments on floor and shelf, a day to bundle up plastic bundles. A day for the lights to go off in the gallery and on the projector. A day to reflect on all of this as the energy starts to dwindle. I hadn't noticed the sound was off, at the low tide point I switch it on and the bird song begins again to sing from the banks of the Taw to the banks of the Avon. Today two people visited, I found them crying in the gallery space, I think through stories of loss, presence and absence.

Final reflection

I took photographs throughout the time of the exhibition. I thought I took many. I meant to take videos and sound recordings. Somehow I didn't. When I look back at the photos I realise that many of the shifts were not documented through meticulous photographing. But then this would have been another project. As I reflect on this I think that in many ways I resisted the desire to translate this very non digital and material record that continued to bend and flake with time and humidity, into the pixilated world of the digital image, it just took the work into another realm. It already exists within the textural, material realm as I type and as I include some of the many images I did take and others kindly took for me, the tiny shifts as bits of rust crumbled from paper onto shelf or floor below happened in the space, often with the space alone as witness. That space isn't empty, no space is, Barad's exploration of the void teeming not with nothingness but with potentials that we humans don't currently understand is relevant perhaps here. The rust crumbled whether or not I photographed or filmed the process, as I said in my viva, just as with the Taw, much that goes on with time and tide happens when I am not there to witness it, so that when I walk again I am trying to untangle clues through residues and traces of other material intra-actions. In this way the gallery space holds an echo. There is a form of documentation in the rust particles that I now have in jars on the studio shelves, in the 'before' and 'after' images of the work, and in the words recorded here above, that circle a sense of the shifting of time and the sometimes uneasy relationship with that and with the raw emotions of sharing work for comment and critique.

If / when the work is shown again, I may include a time lapse to document the space in another way. The work will go next back to the Taw to be attached to the rusting metal ships with magnets, and to witness some shared walks collecting plastic debris, Covid dependent this may be in spring 2022.

Information printed for visitors, clipped within a clipboard by the entrance. The maps were in place of labels. A printed copy of the tide times was left on top of the plans chest:

matter maps

Lydia Halcrow

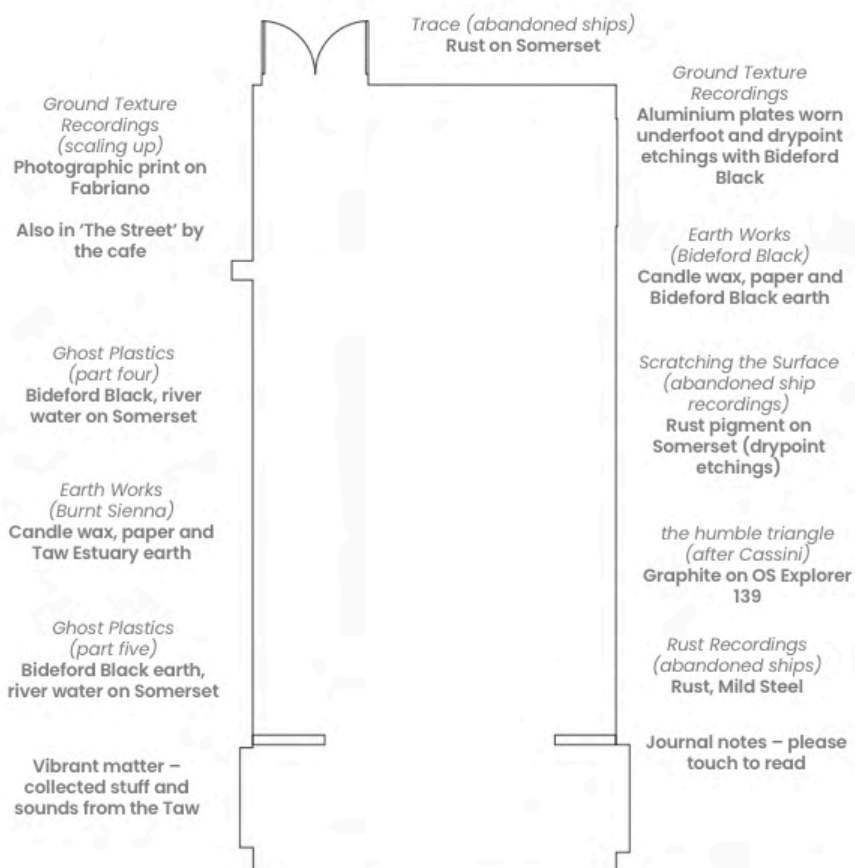
'It matters what matters we use to think other matters with; it matters what stories we tell to tell other stories with; it matters what knots knot knots, what thoughts think thoughts, what descriptions describe descriptions, what ties tie ties. It matters what stories make worlds, what worlds make stories.' Donna Haraway, 2016, p.12

The exhibition brings together a body of artwork made through a practice-based PhD. The work as matter maps explores collaborative approaches to making *with* a place through a case study of the Taw Estuary in North Devon. As sea levels rise, the matter maps offer earthy material/textural/temporal records of the landscape through embodied processes exploring vibrant entangled traces between human and more-than-human worlds.

The work is in flux like the place of its making. Some bits will curl, bend and crumble off. Visitors are invited to handle the words on tracing paper and the work in the plans chest. Some of the work and the plastics will be moved and re-sorted to coincide with the high and low tide times along the Taw, just as the sea sifts the sand and plastic debris along the strandline.

matter maps

Lydia Halcrow



Please take one and return it at the end of your visit to save printing more.

Thank you.

Exhibition Images

matter maps

Michael Pennie Gallery,
Locksbrook Campus
Bath Spa University
October 9th – 21st 2021

Installation images of *matter maps* at the Michael Pennie Gallery 9th - 21st October 2021, all image credit to John Taylor, Bath Spa University (2021) until marked:



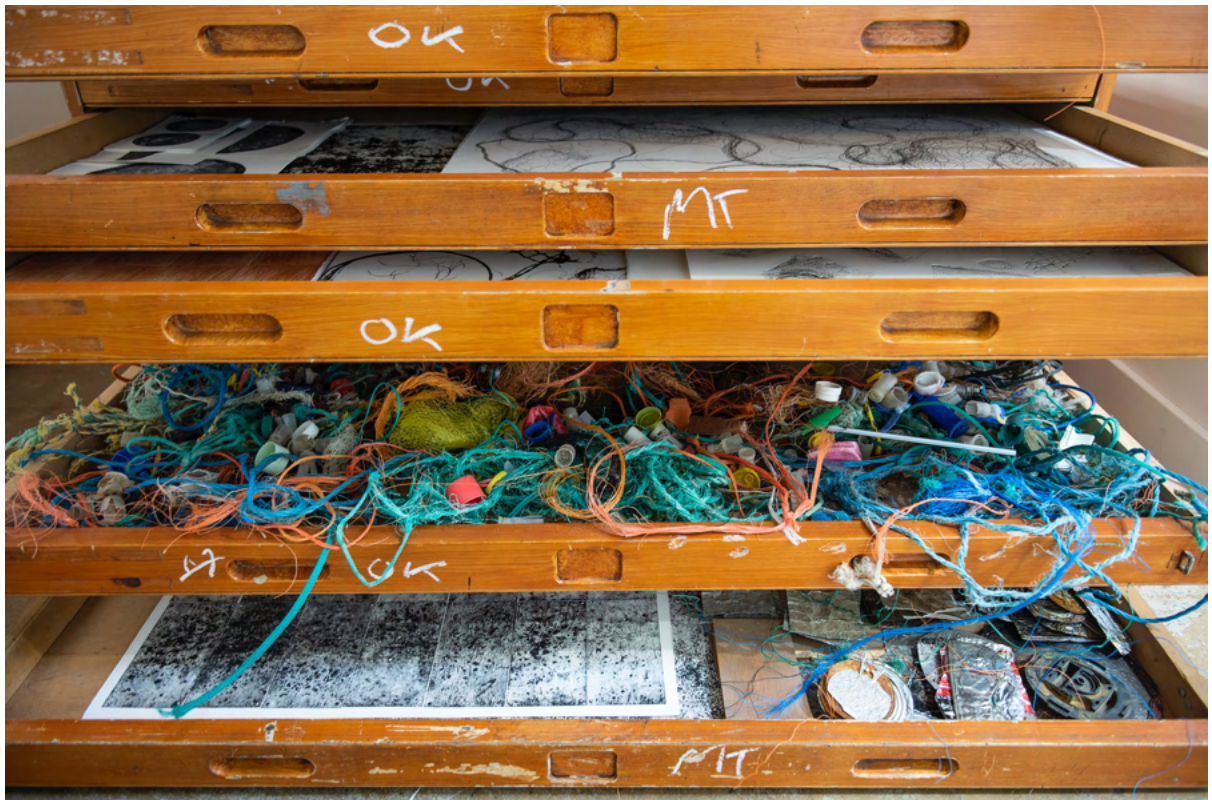














All images above of the installation of *matter maps* are credit to John Taylor at Bath Spa University.

Images below of the installation of *matter maps* outside of the Michael Penny Gallery, in an area of Bath Spa University, Locksbrook Campus called 'The Street'. Image credits to John Taylor at Bath Spa University.



Images that follow are credit to Lydia Halcrow:



Drawings left behind on the wall after the above *Earthworks* was removed, leaving a trace of wax and pigment Bideford Black generated through my touch (and possibly other visitors) during the exhibition



Rust fragments falling throughout the exhibition of the work as air temperatures, flow, humidity levels changed.



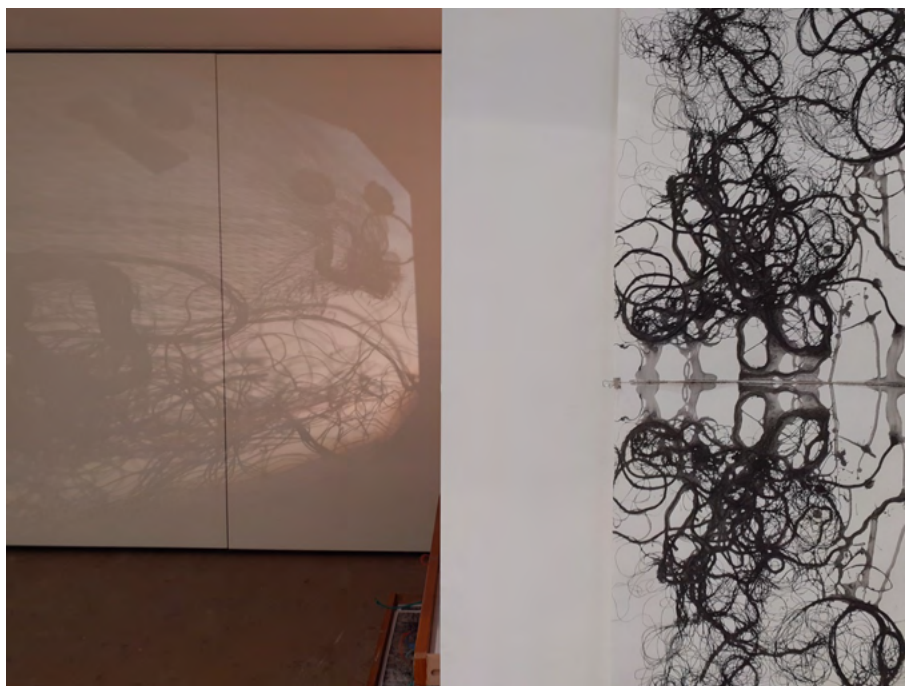




Ground Texture Recordings (Scaling up) were unfixed at the bottom of each paper work so that they began to curl and lift as airflow changed and doors into the art school building opened and closed



Above and below images show changes to the plastics on the projector, projecting in the back wall in the gallery space





Visitors were invited to touch and leaf through the tracing paper typed journal entries – these began to curl over the exhibition time



Visitors also leafed through the *Ground Texture Recordings* book, and I changed the order of the pages throughout the exhibition



When visitors came into the space, if the main building doors were open there was a sudden through-flow of air and the works unfixed to the wall and the bottom moved up away from the wall space before settling back down. Some began to bend and curl depending on humidity levels over the duration of the exhibition



Testing a 'hang' back on one of the abandoned ships along the Taw in August 2021. A further exhibition of work hung in this way outside along the Taw is planned for spring 2022 in collaboration with some walking events at the Burton Gallery, Bideford, situated on the opposite side of the estuary to these boats, upstream on the Torridge. In tests the wind blows the paper – the intention is to coincide with a higher spring tide so that the water surrounds the ship.

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